DOCUMENT RESUME

ED 207 976	SP 018 926

AUTHOR	Masoner, Paul H., Ed.; Klassen, Frank H., Ed.
TITLE	Analytical Case Study of the Korean Educational Development Institute. Final Report.
INSTITUTION	American Association of Colleges for Teacher Education, Washington, D.C.; Pittsburgh Univ., Pa.
SPONS AGENCY	Agency for International Development (Dept. of State), Washington, D.C.
PUB DATE	79
CONTRACT	AID/ta-BOA-1378
NOTE	694p.
EDRS PRICE	MF04/PC28 Plus Postage.
DESCRIPTORS	Change Agents; Compulsory Education; Curriculum Development; Delivery Systems; *Developing Nations; *Educational Assessment; Educational Media; Foreign Countries; Operations Research; *Organizational Development; *Research and Development Centers; Self Evaluation (Groups); *Summative Evaluation; Teacher Education
IDENTIFIERS	*Korean Educational Development Institute

ABSTRACT

The Korean Educational Development Institute (KEDI) is an independent, autonomous, and government-funded educational research and development center. Initially founded for the purpose of developing a comprehensive and systematic reform of education in Korea following the Korean War, KEDI has assumed far-reaching responsibilities. Included among these are: population education, air and correspondence studies at the secondary school level, teacher training research, industrial arts and vocational technical education skill learning, Seamaul education (the community movement), informal and nonformal education programs, instructional and educational radio and television, women's studies, and educational policy studies. This case study of KEDI documents its origins and early development, reviews and analyzes the planning operations of the first two years, and reports on three years of study and analysis, as well as on an assessment of progress and the provision of continuous feedback to KEDI administration and staff. Chapters discuss: (1) an overview of KEDI; (2) the setting for educational reform in Korea; (3) the origins of the KEDI; (4) KEDI management, organization, and operations; (5) the Elementary-Middle School Development Project; (6) educational broadcasting; (7) teacher education; (8) cost analysis of the Elementary-Middle School Project; (9) the evolution of a comprehensive national educational research and development institute; and (10) a plan for self-assessment at KEDI. (JD)

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ANALYTICAL CASE STUDY OF THE KOREAN EDUCATIONAL DEVELOPMENT INSTITUTE

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FINAL REPORT

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SP018926

The Analytical Case Study of the Korean Educational Development Institute has been conducted by the American Association of Colleges for Teacher Education in cooperation with the University of Pittsburgh under the terms of a Basic Ordering Agreement with the United States Agency for International Development (AID/ta-BOA-1378, T.A. #1) under the direction of the Educational Technology and Education Group, Development Support Bureau, and the Bureau for Asia/AID.

1979

This final report of the Analytical Case Study of the Korean Educational Development Institute, is the fourth and final volume of a series of four major reports completed during the period July 1975 - December 1978. The report has been prepared cooperatively by members of the study team. However, the responsibility for the final form and substance of the report is that of the project director and the editors.

Paul H. Masoner
Frank H. Klassen
Editors

THE CHARTER OF NATIONAL EDUCATION

KOREA

We have been born into this land, charged with the historic mission of regenerating the nation. This is the time for us to establish a self-reliant posture within and contribute to the common prosperity of mankind without, by revitalizing the illustrious spirit of our forefathers. We do hereby state the proper course to follow and set it up as the aim of our education.

With the sincere mind and strong body, improving ourselves in learning and arts, developing the innate faculty of each of us, and overcoming the isting difficulties for the rapid progress of the nation, we will cultivate ur creative power and pioneer spirit. We will give the foremost consideration to public good and order, set a value on efficiency and quality, and, inheriting the tradition of mutual assistance rooted in love, respect and faithfulness, will promote the spirit of fair and warm co-operation. Realizing that the nation develops through the creative and co-operative activities and that the national prosperity is the ground for individual growth, we will do our best to fulfill the responsibility and obligation attendant upon our freedom and right, and encourage the willingness of the people to participate and serve in building the nation.

The love of the country and fellow countrymen together with the firm belief in democracy against communism is the way for our survival and the basis for realizing the ideals of the free world. Looking forward to the future when we shall have the honorable fatherland unified for the everlasting good of posterity, we, as an industrious people with confidence and pride, pledge ourselves to make new history with untiring effort and collective wisdom of the whole nation.

(informal translation)

TABLE OF CONTENTS

		Page
FOREWORD		1
Chapter I	THE KOREAN EDUCATIONAL DEVELOPMENT INSTITUTE: AN OVERVIEW	11
Chapter II	KOREA: SETTING FOR EDUCATIONAL REFORM	20
Chapter III	THE ORIGINS OF THE KOREAN EDUCATIONAL DEVELOPMENT INSTITUTE	51
Chapter IV	ORGANIZATION, MANAGEMENT, OPERATIONS	63
Chapter V	THE ELEMENTARY-MIDDLE SCHOOL DEVELOPMENT PROJECT	110
Chapter VI	EDUCATIONAL BROADCASTING	201
Chapter VII	TEACHER EDUCATION	238
Chapter VIII	COST ANALYSIS OF THE ELEMENTARY-MIDDLE SCHOOL DEVELOPMENT PROJECT	283
Chapter IX	THE EVOLUTION OF A COMPREHENSIVE NATIONAL EDUCATIONAL RESEARCH AND DEVELOPMENT INSTITUTE	338
Chapter X	A PLAN FOR SELF-ASSESSMENT AT KEDI	420
APPENDICES		A-1

FOREWORD

The Korean Educational Development Institute (KEDI)

The Korean Educational Development Institute, founded in 1972 by the Ministry of Education of the Republic of Korea as its external research and development component, is an independent, autonomous, and government-funded educational research and development center. The primary mission assigned to KEDI initially was "to undertake comprehensive and systematic reform programs for the schools in Korea." However, once KEDI came into existence, the Ministry of Education and the nation began to look to KEDI to assume a broader and more comprehensive role in Korean educational research and development. Thus, in the few short years of its existence, KEDI has assumed responsibility not only for the Elementary-Middle School Development Project which focused on the primary mission of comprehensive and systematic reform of Korean education in the first nine grades of schooling, but also for a number of other significant areas of concern. Included among these are the following: population education, air and correspondence studies at the secondary school level, teacher training research, industrial arts and vocational-technical education skill learning, long range educational planning, Saemaul education (the community movement), informal and non-formal education programs, instructional and educational radio and television, women's studies, and educational policy studies. With the assumption of these significant tasks KEDI has emerged as a major force for educational change in Korea.

The Analytical Case Study

In view of the significant role which KEDI assumed in the field of education, its progress and accomplishments became a matter of both interest and concern to many individuals and groups in Korea: the Ministry of Education, universities and colleges, public and private schools, the educational community generally, the

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national government, and the public. In addition, the United States Agency for International Development, in view of its close relationships with KEDI since its founding, was especially interested in its success.

A realization of the critical importance of education in national development and a recognition of the role of KEDI in educational reform and improvement led to a decision in 1974 by both KEDI and USAID/Washington to implement an analytical case study of KEDI to be made by an external professional group. This study, it was agreed, would document the origins and early development of KEDI; would carefully review and analyze the planning and operations of the first two years; and would over a period of three years continue the study and analysis as well as assessment of progress, working closely with KEDI administration and staff, providing continuous feedback, and becoming a partner in the comprehensive effort to improve education in Korea. There was implicit in this decision the belief that the efforts of the study team and the ultimate report would be useful to KEDI in its continuing efforts to improve education in Korea and at the same time would be an important means of disseminating information concerning KEDI and its work that would be helpful to other nations concerned with educational reform and national development.

At the request of USAID/Korea and KEDI the present project director engaged in preliminary discussions with KEDI administrative staff and USAID staff in Korea in August 1974. In November 1974 he participated in the International Conference on Korean Educational Development Project and gained considerable insight into the nature and operation of KEDI and the comprehensive educational reform programs in which it was involved. At that time he accepted an invitation to direct an external analytical case study of KEDI.

Prior to the formal undertaking of the case study the project director spent approximately one month in Korea making a preliminary study of KEDI and developing plans for the proposed three-year study. These plans were based not only on the on-site preliminary study of KEDI but also on conferences with KEDI administration and staff, discussions with educational leaders in Korea, and conversations with staff of AID/Korea and AID/Washington.

In June 1975 a contract was negotiated and approved that the study would be undertaken by the American Association of Colleges for Teacher Education in cooperation with the University of Pittsburgh. The following statement of purposes formed the basis for the contract and the project plan:

1. To document and analyze systematically the origin, development, and program of KEDI as the major educational research and development operation of Korea.
2. To study the developmental history and effectiveness of KEDI and the progress that it has achieved in relationship to its internal purposes and goals and the educational goals of the nation.
3. To provide, during the period of the study, systematic and continuing reports to KEDI concerning activities, findings, and conclusions of the team and consultants.
4. To develop a model for continuous study and assessment of the continuing efforts for educational reform and improvement by KEDI alone or in cooperation with external groups.
5. To provide a document for developed and developing nations which will describe KEDI as a possible model for those concerned with educational reform and improvement.

Case Study Design

The design of the analytical case study was the product of close working cooperation involving the project director and KEDI administration and staff, consultations with Dr. Robert M. Morgan of Florida State University in view of his long and deep involvement in educational developments in Korea and in KEDI itself, and continuing discussions with AID/Korea and AID/Washington.

The outcome of these cooperative efforts was the development of a model for the case study. The model represented certain modifications in the process widely used in the United States for the accreditation of higher education institutions. The process of accreditation, unique to the United States, has become well-established and has gained considerable acceptance as a systematic and valid strategy for evaluating the organization, programs, and outcomes of higher education institutions. This strategy, as applied to the analytical case study of KEDI, required certain modifications to fit the purposes and circumstances of the project. However, with appropriate changes, none of serious or significant consequence, the model did meet planning requirements that had been developed cooperatively and been agreed upon and at the same time had high relevance to the task and to the purpose to be served.

Included in the model are the following elements:

1. The development of an outline for the study which includes all those topics which are relevant to the case study.
2. The selection of an external team of evaluators with the knowledge and skills appropriate and relevant to the individual tasks and the total task to be accomplished.
3. The development, by the case study team and consultants in cooperation with KEDI, of a systematic strategy to include indicators which permit measurement and assessment of KEDI programs; standards or criteria to be utilized; nature and methods of data collection; establishment of counterpart relationships; nature and use of conferences with educators, parents, students, civic leaders, government officials, and others; observation of educational programs; analyses to be made and methods of analysis; data interpretation; and the development of findings, conclusions, and recommendations.

4. Completion by KEDI of special reports prior to the beginning of case study team and consultant activities and at periodic times during the three-year evaluation that will relate directly to the case study outline and that will include data necessary and relevant to the evaluation and case study tasks.
5. Review, study, and analysis of special reports prepared by KEDI, of KEDI publications, and of other available data by case study team and consultants.
6. Team and consultant visits to Korea in order to accomplish project tasks including the following: (a) establishment of counterpart relationships with KEDI staff and others, (b) continuing study of all applicable data, instructional materials, instructional radio and television programs, (c) study and analysis of management systems, instructional systems, evaluation procedures, innovation diffusion, long range educational planning, and other KEDI strategies, (d) observation of educational programs and projects, (e) interviews and conferences with government officials, educational personnel, civic leaders, students, parents, and others, (f) study and analysis of data on achievement and educational improvement; (g) analysis of findings and development of conclusions and recommendations.
7. Provision on a continuing basis of Case Study Team/Consultant - KEDI interchange of ideas and a systematic plan for reporting and feedback.
8. Preparation by Case Study Team of ad hoc, interim, and final reports with provision for review by KEDI of such reports for identification of factual inaccuracies and inappropriate conclusions.

9. Preparation of all reports in final form as the sole responsibility of the team, consultants, and project director.

Case Study Team and Consultants

During the course of the project the following individuals served as permanent members of the Case Study Team during the course of the entire project:

Dr. John O. Bolvin
Associate Dean and Professor of Educational Research
School of Education
University of Pittsburgh

Dr. William F. Grady
Professor and Chairman
Division of Educational Communications
College of Education
Temple University

Dr. Ran Soo Kim
Professor of Higher Education
Graduate School of Education
Yonsei University

Dr. Sang Joo Lee
Professor of Education
College of Education
Seoul National University

Dr. Seth J. Spaulding
Professor of International and Development Education
School of Education
University of Pittsburgh

Dr. Paul E. Watson
Professor of International and Development Education
and Professor of Educational Administration
Co-Director, University Center for International Studies
University of Pittsburgh

Dr. Paul H. Masoner (Project Director)
University Professor of Education and Dean Emeritus
School of Education
University of Pittsburgh

Dr. Frank H. Klassen (AACTE Project Director)
Associate Director
American Association of Colleges for Teacher Education

The following individuals also served as members of the Case Study Team but not for the duration of the project:

Dr. Betty Schantz
Assistant Dean and Professor of Education
College of Education
Temple University

Dr. Sam P. Wiggins
Professor of Education
College of Education
Cleveland State University

Dr. Stuart Wells
Associate Professor of Business
San Jose State University

Dr. Don Adams
Professor of International and Development Education
School of Education
University of Pittsburgh

Six Korean educators served as consultants to the project for its duration:

Dr. Bum Mo Chung
Professor
College of Education
Seoul National University

Dr. Woochul Kang
Professor
College of Education
Ewha Womens University

Dr. Dong Chul Kim
Professor
College of Education
Ewha Womens University

Dr. Jongchol Kim
Professor
College of Education
Seoul National University

Dr. Hahn Been Lee
President
Ajou Institute of Technology

Dr. Dong Suh Park
Professor
Graduate School of Public Administration
Seoul National University

Serving as members of a small task force responsible for special projects related to the case study were the following:

Dr. James Kelly, Jr.
Dean, School of Education
University of Pittsburgh

Dr. Frank H. Klassen
Associate Director
American Association of Colleges for Teacher Education

Case Study Team/Consultant Activities

Case Study activities began shortly after the approval of the project contract on June 30, 1975. There was a careful adherence to the original case study design with appropriate modifications that were determined by the team members and consultants as the project continued.

During the contract period from July 1, 1975 through February 28, 1979 four on-site team studies were conducted in Korea, ranging from two to three weeks each. In addition the project director alone or with members of the task force was involved in four additional on-site project tasks.

While the major project tasks undertaken in Korea involved intensive work at KEDI or at KEDI field sites and discussions with KEDI administrators and staff, the team members gave considerable emphasis to in-depth discussions and consultations with key individuals outside KEDI - Ministry of Education officials; administrators and staff from universities, junior teachers colleges, and other higher education institutions; teachers and administrators in public and private schools; executives from other key organizations such as the Korean Institute of Science and Technology, the Korean Development Institute, and others; representatives of professional organizations in the field of education; representatives of international organizations such as UNESCO and UNICEF; and civic and business leaders.

Extensive discussions were held from time to time with members of the group of Korean educators who served as consultants to obtain their advice and counsel as well as their judgments concerning KEDI, its accomplishments, its problems, and its progress.

Prior to the completion of this final report, three extensive interim reports of 227, 128, and 159 pages respectively were prepared following the first three team on-site studies in Korea. In addition, following each visit of the team, of the task force, and of the project director oral reports were made to KEDI administration and selected staff and to AID/Korea staff. Throughout each on-site visit, team members individually and collectively provided consultative services intended to assist KEDI in all aspects of its responsibilities. Final oral reports by the team members were designed to provide KEDI with evaluative data and observations and also with recommendations for consideration by KEDI.

This final report is based primarily on KEDI from its inception in 1972 to the time of the final on-site visit of the team in July, 1978. However, a follow-up on-site visit by the project director and one associate in December, 1978 has made it possible to include in the report certain developments that have occurred up to the end of calendar year 1978.

A still later visit to Korea in the summer of 1979 has resulted in the addition of information relating to KEDI activities through July, 1979.

ACKNOWLEDGEMENTS

Thanks and recognition must go to the many individuals whose competence, insights, and cooperation were essential to the completion of the Analytical Case Study of the Korean Education Development Institute: the members of the case study team and the task force; the Korean educators who served as consultants to the project; the representatives from the Korean educational community, from Korean governmental agencies, from professional educational associations, from international organizations, and from the business and industrial community who met with team members for consultation and discussion; representatives from USAID/Korea and USAID/Washington for their continuing counsel and support.

A very special thanks must go to Dr. Yung Dug Lee, President of KEDI, and to his associates and staff members for their assistance and cooperation in a difficult task. Their continuing participation and support not only made the completion of the project possible but gave to all those involved in the case study a sense of partnership in the important task of KEDI - educational reform for national development.

Paul H. Masoner
Project Director
1979

CHAPTER I

THE KOREAN EDUCATIONAL DEVELOPMENT INSTITUTE

AN OVERVIEW*

To developing nations throughout the world, the Korean Educational Development Institute (KEDI) stands as an outstanding example of a national effort to improve the educational system, to expand educational opportunity, and to utilize educational reform as a key element in national development.

Following the devastation of the Korean War and the almost complete disruption of the educational process, the task of developing a new educational system relevant to Korea's needs became a national priority of the highest order. Extensive and intensive efforts were made in the years following the war to build new schools, to create new teacher training institutions, to prepare new and additional teachers with higher qualifications, and to develop new textbooks and other teaching-learning materials. Particularly significant was the effect of compulsory education at the elementary school level. By the end of the decade of the 1960 s, more than 95 percent of all children of elementary school age were enrolled and attending school. Enrollments at the middle school and high school level increased to the point that large numbers of children wishing to continue beyond the elementary school were unable to do so because sufficient places were not available. At the university level, a similar critical situation existed with many thousands of qualified applicants unable to gain admission simply because facilities and resources were insufficient to meet the demand and the need.

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*This chapter is intended to provide the reader with a brief but comprehensive statement concerning the nature of the Korean Educational Development Institute that should be useful background prior to the reading of the analytical case study report.

While the period of educational expansion and development was occurring, Korea's economic and industrial development was skyrocketing. It was clear that Korea was rapidly achieving a new and important status in the world of business and industry. However, with this change came the need for improved education and increased educational opportunity in order to meet the requirements of a new and effective work force. Leaders in government and education clearly saw the need for educational reform that would enhance the process of national development.

A Long-Range Educational Planning Committee, appointed by the government to study educational needs and to make appropriate recommendations for the improvement of education, urged the undertaking of a comprehensive educational reform and at the same time suggested the creation of a national research and development institute to deal with educational reform projects and programs. At the request of the Korean government, a study team from the Florida State University conducted a systems analysis on Korean education and subsequently recommended the development of a new educational system for the primary and middle schools of the nation. This recommendation was followed by the granting of a development loan from the United States Agency for International Development in the amount of $7,500,000 to be utilized in the establishment of the new research and development institute which was to undertake the task of developing the new educational system, field testing the system through a program of experimentation and demonstration, and diffusing the system, once approved, throughout Korea. The loan proposal was approved by the National Assembly on July 31, 1972. On August 23 of the same year, the Minister of Education authorized the formal inauguration of KEDI, and Dr. Yung Dug Lee was appointed to the position of director.

In the 1974-75 Annual Report of the new organization, KEDI is described as "an independent, autonomous, and government-funded educational research and development institute, which undertakes comprehensive and systematic studies on educational goals, content, and methodology. These studies are surported to develop a new educational system that will be responsive to the nation's needs and provide for the solution of educational problems." Both the Korean Educational Institute Law and the subsequent Presidential Decree which formally authorized the establishment of KEDI clearly identifies the role of KEDI as a comprehensive educational research and development institute. Specific mention is made of tbe development and diffusion of innovative educational programs that utilize modern radio and television technology. In addition KEDI is designated as a teacher training institution.

KEDI today is a large research and development operation with almost 350 employees, the great majority of whom are professional staff members. The administrative organization includes a president, vice president, auditor, divisional directors, and coordinators. Overall policy is vested in a board of directors which include representatives from government and from education and under the chairmanship of the Minister of Education. Financial support comes largely from the national government with some funds received through contracts and grants.

During the almost seven years of its existence, KEDI has made remarkable progress in the development of a new educational system for the elementary and middle schools of the nation. However, although the Elementary-Middle School Development Project has been the primary task of KEDI and has been its major activity since its establishment, KEDI has evolved into a major comprehensive educational research and development institute serving all of Korea's educational needs. It has achieved in education a status similar to that of other prestigious organizations established prior to KEDI in other sectors such as science and technology, economics, and planning. Today KEDI ranks among the largest and most sophisticated comprehensive educational research and development organizations in the world. The remaining pages of this first chapter provide a brief overview of major tasks in which KEDI is involved.

The Elementary-Middle School Development Project (E-M Project)

The Elementary-Middle School Development Project has been the major task of KEDI since KEDI's establishment in 1972. The project is concerned with the development of a new educational system for the primary and middle schools that will provide educational programs of high quality and that will lead to the solution of pressing problems facing Korean education. In order to accomplish these ambitious goals, KEDI has made major changes and improvements related to the curriculum, has developed new instructional and school management systems, and has produced an impressive array of new and innovative and teaching-learning materials. In the course of the project, KEDI has enlisted the participation and support of a number of demonstration and cooperating schools which have served as the site for major demonstration and experimental efforts in the new educational system. Important features of the new system are (1) a general flow model of the instructional process with five stages--planning, diagnosis, teaching/learning, extended learning, and evaluation, (2) the application of the mastery learning concept, and (3) extensive utilization of radio and television in the instructional process.

Other tasks of KEDI related to the E-M Project include the development of new pre-service and in-service programs of teacher training applicable to the new educational system; the operation of workshops, conferences, and seminars for diffusing the new program; and the development of a plan for nationwide implementation.

Educational Broadcasting

From the outset of the E-M Project, radio and television were to be important elements in the instructional delivery process. In addition it was clear that a variety of other educational programs developed by KEDI or by other educational entities in Korea could advantageously utilize radio and television media.

Consequently, KEDI undertook the development of a major broadcasting system that was to utilize radio and color television.

In order to serve these needs, KEDI constructed a modern radio-television studio with complete equipment for the development of a wide range of educational and instructional programs utilizing both radio and television. Since 1976 KEDI has been heavily involved in the production of a variety of programs for use in the E-M Project, in teacher training, in the Air and Correspondence High School, and in general education programs for the public. In late 1973, through a contract between the Ministry of Education and the Tethered Communication Corporation (T-Com), arrangements were made for the construction of a transmission system that utilized tethered helium filled balloons to which transmitters are affixed. Unfortunately, the T-Com system failed to meet the specifications and requirements of KEDI, and as a result, several years of experimental broadcast time were lost. In 1977 a decision was made to abandon the T-Com system and to construct a new land-based system or to expand and utilize existing land-based networks. Planning for this is now underway.

In spite of the failure of T-Com, it has been possible for KEDI to broadcast a large number of instructional and educational radio programs utilizing the facilities of the Korean Broadcasting System. In addition, although little formal or extensive use has been possible in the field of television, KEDI has produced approximately 2,000 color television programs which are to be used once the new land based system is in operation.

Curriculum Development

The major curriculum development activities of KEDI have focused on the E-M Project and not only have given direction to curriculum reform but also have resulted in the preparation of important curriculum materials. However, KEDI has also been involved in curriculum development in other areas as well--population education, the high school of air and correspondence, industrial arts and

and technical education, environmental education, and other fields of endeavor. Recently KEDI was given the assignment of textbook development for elementary, middle, and high school courses. This new task, formerly handled by a unit within the Ministry of Education, has given KEDI an even greater opportunity to make major modifications of school curricula. Plan call for a massive effort to institute significant new curricula at all levels with new teaching-learning materials.

Teacher Education

It was clear to KEDI and to leading educators than an important element in major educational reform was the improvement of the quality of teaching. Thus KEDI, as the national educational research and development center, as a catalyst for educational improvement, and as an innovator in educational programs, developed four major thrusts in teacher education: (1) basic improvement in the current national system of both pre-service and in-service teacher education, (2) the development of a program of in-service education for those teachers involved in the comprehensive demonstrations and experimental programs of the E-M Project, (3) the development of models for pre-service education in the junior teachers' colleges, and (4) formulation of a plan for national pre-service and in-service teacher education programs once the E-M Project was ready to be implemented nationwide. In these tasks KEDI made use not only of its own expertise and resources but called upon the support and participation of a variety of other organizations and institutions. Through cooperation and through the mobilization of extensive resources, KEDI has made significant progress in the improvement of teacher education and the quality of teaching.

Basic Studies

Early in its existence KEDI became deeply involved in a program of basic studies. Initially, these studies related rather directly to the major task of

KEDI--the development of a new educational system at the elementary and middle school levels. However, as KEDI expanded its efforts and moved toward a new role as a comprehensive research and development center, there was an expansion of basic studies to cover a variety of educational problems and concerns as well as the new problems arising from the E-M Project as it continued to develop. In some instances the motivation for these studies originated within KEDI; in others, the studies were undertaken at the request of the Ministry of Education.

A selected number of these basic studies are listed below under four categories: (1) Historical and Philosophical Foundations--educational goals, historical foundations of the National Charter of Education, value and moral education; (2) Curriculum, Content, and Method--population education, environmental education, industrial arts education, community education; (3) System Delivery Strategy--teacher education, educational resource centers, career guidance, special education, pre-school education, life-long education; (4) Economics of Education--educational expenditures, cost benefit studies of public schools, effectiveness of business and technical education.

Policy Planning Studies

KEDI has been involved in a number of policy and planning studies. In most cases these studies dealt with major educational problems relating to education in Korea and were undertaken at the request of the Ministry of Education or some entity of the government. Policy studies undertaken dealt with the following problems: the large number of young people seeking admission to the universities and facing continued rejection because of inadequate facilities and resources; compulsory education; and high school equalization. In addition KEDI has been called upon by the Ministry of Education to prepare long-range planning studies and has completed four major planning studies outlining a program of educational development for the nation at all educational levels from pre-school to the university and the graduate school. The assumption of this responsibility has been an important factor in an increased recognition of KEDI as the major educational research and development institution in Korea.

Institutional Linkages

The increasing acceptance of KEDI as the national educational research and development organization in Korea has in part been the result of the institutional linkages that KEDI has developed. These have included enabling linkages (those which facilitate policy and financial support); functional linkages (those which enlist the working cooperation of other institutions); diffusion linkages (those necessary to assure knowledge of the institute and its work); and normative linkages (those with other groups concerned with developing standards of quality and performance in a field).

KEDI has established such linkages with a number of national and international organizations. At the national level these include various government ministries and agencies, universities, research institutes, teacher training colleges, provincial school boards, and professional organizations. At the international level, linkages have been developed with USAID, UNESCO, UNDP, UNICEF, ACEID, and other organizations both regional and worldwide in scope.

Publications

An important aspect of KEDI's activities has been a massive publications program. Included in the publications effort are research reports, newsletters, journals, books, teacher guides, student workbooks, broadcast guides, and a variety of teaching-learning materials. The publications program is vitally important in that (1) it provides the E-M Project and other educational programs with teaching-learning materials and (2) serves an important role in dissemination of KEDI activities and research efforts.

Seven Years of Progress

KEDI has, in the first seven years of its existence, achieved remarkable success in the reform and modernization of elementary and middle school education and is now engaged in developing for the Ministry of Education a plan for regional and national implementation of the new educational system. At the same time, KEDI has evolved into a comprehensive educational research and development organization and has gained the confidence of the government, the educational community, and the general public. The chapters that follow provide an analytical study of the origins of KEDI, of its development, of the constraints and problems encountered in the formative years, of its progress in effecting major educational reform, and of its role in long-range educational planning for the nation.

CHAPTER II

KOREA: SETTING FOR EDUCATIONAL REFORM

This chapter presents a description of the historical and social setting in which the modern educational system in Korea has developed and in which the Korean Educational Development Institute has come into being. It describes the general character of the Korean nation, presents a brief historical overview of Korean education, and delineates the contemporary educational scene of the country in order to provide a general background for understanding the social and educational conditions which gave rise the establishment and development of KEDI.

A. General Character of the Nation

The Republic of Korea occupies the southern portion of the Korean peninsula projecting southward from Manchuria, with Japan to the southeast, the Chinese Mainland to the west, and the Soviet Union to the far north. The northern portion of the peninsula has been under the control of communist North Korea since the country was divided into two parts at the end of World War II. The geographical position of the country for centuries has given it strategic importance in the rivalries of larger nations continuously bent on domination.

The Republic has effective control over a territory of about 38 thousand square miles lying below the demilitarized zone established after the Korean War (1950-1953). Only about a fourth of the land is arable, the rest being mountains. The population of 36 million makes Korea one of the most densely populated nations in the world, although the population growth rate has recently declined.

Since the liberation from Japanese colonial rule in 1945 and the establishment of a democratic government in 1948, the Republic has maintained a constitutional form of government based on democratic principles although the nature of the constitution has experienced substantial changes over years. The major national goals which the nation has strived to achieve during the past three decades were to facilitate economic and social development, to defend the nation from incessant military threat from the north, and ultimately to unify all the peoples on the Korean peninsula. Historically, the economy of Korea has been predominantly agrarian, with a limited amount of arable land used primarily for the cultivation of rice. For a nation with scarce natural resources, industrialization is crucial for economic survival. After a long history of poverty, a major thrust for accelerated industrialization began in the early 1960's when the economy had hardly recovered from the extensive devastations wrought by the Korean War. During the past one and a half decades, the economy has grown at an average annual growth rate of nearly 10%. GNP per capita increased more than 10 times from $83 to $846 during the period of 1961-1977. Exports which totalled only $30 million in 1961 have grown to more than 10 billion in 1977. The manufacturing sector has played a leading role in the economic development of the country, although virtually all sectors of the economy witnessed drastic expansion.

The impressive economic growth of Korea has been achieved while the government has implemented successive five-year development plans since 1961. The marked economic expansion can be attributable in large part to an ample and industrious labor force trained in an improved educational system during the Post-Liberation period. It can also be attributable to the effective governmental policies directed toward attraction of foreign investments, promotion of export trade, improvement of public transportation and utilities, and active support for industries.

Korea, as other rapidly changing societies, has experienced attendant social problems due to the uneven rates of growth among different social sectors and areas. As investments of limited capital and resources had to be concentrated on the industrial sector in 1960's, there was an unbalanced growth between the industrial and agricultural sectors, thus causing a gap between the living standards of urban and rural people. This regional gap resulted in a wave of rural migrants to the urban centers which in turn caused a deterioration of living conditions in large cities. Whereas only 13% of the population lived in urban areas in 1944, now more than half of the population are urban residents, many of whom were attracted toward cities in the waves of migration.

As the processes of industrialization and urbanization have been increasing in tempo, the traditional pattern of Korean culture has also rapidly been transformed. Traditionally, Confucianism, along with Buddhism, though less powerful, has had a profound and far-reaching influence on the ways of living and thinking of people. The Confucian code of ethics has placed an emphasis upon filial piety, loyalty to authority, and reverance for scholarship. The traditional family system in Korea was the extended family, which was strictly ruled by the Confucian ethic. Korea was first totally exposed to foreign influences in the late 19th Century when the relatively isolated country was forced to open its doors to Western culture and religion. It has been subjected recently to more powerful changing social forces emanating from industrialization and urbanization. As a consequence, Korean society has faced abrupt discontinuity and confusion in the value system and in social organization.

In recent years, a community development movement has been actively implemented as a strong driving force in Korea. The Saemaul Movement (New Community Movement), initiated by President Park Chung-hae in 1970, aimed to help villagers create better living conditions by improving their environment, boosting their incomes, and fostering the spirit of diligence, self-reliance, and cooperation. Although the movement from the beginning has been financially and administratively supported by the government, it has gradually developed into a cooperative self-help drive based on the spontaneous participation of the people. As a matter of fact, the Saemaul Movement which first started in rural villages has now evolved into a nationwide movement in which all people, in rural and urban areas and on farms and in factories, are participating. Korean schools play an important role in the movement by providing community education and services to the communities surrounding them.

B. Historical Overview of Korean Education

Historical Backgrounds

The beginning of formal education in Korea can be traced back to as early as the fourth century through historical records. But it was not until the adoption of the Confucian system and ideals during the Koryo dynasty (918-1392) that any significant system of education developed in Korea. From that time on until the late 19th century, classical education under the heavy influence of Confucian thought played an important role in determining the traditional educational pattern of Korea.

After the Yi dynasty (1392-1910) replaced the Koryo dynasty and as the ruling class became officially committed to Confucianism, an elaborate educational system was developed to educate a small class of learned rulers and Confucian scholars. The principal goal of classical education was to develop learned men who were well versed in Chinese literature, who were able to understand Confucian philosophy, and who lived good lives in accordance with Confucian code of ethic. The ability to read and write Chinese characters, memorize passages from the works of Confucius, and compose prose and verse in an elegant style were stressed in classical education. The most common motivation of young people for obtaining an education was to pass government examinations at various levels which were the main road leading to advanced government appointments. In Confucianism, education in itself, however, was highly regarded as a means of self-improvement and enriched moral life of an individual. Classical education during the Yi dynasty was almost solely limited to the sons of upper class families (yangban). Children started formal education by attending small private village schools, called sodang, where they received elementary education in reading and writing the Chinese characters and memorizing basic classics. Following work at the sodang, talented students from yangban families might continue their study at one of the intermediate schools, namely a hyanggyo in local areas and a sahag in Seoul. The highest educational institution in the Yi dynasty was the Confucian College (songgyungwan) located in Seoul.

During the closing decades of the Yi dynasty, the flow of Western civilization reached Korea with increasing impact through China and other contacts. Eventually, Western influence overcame the isolationist policies of the feudalistic government. In the 1880 s, revolutionary educational reforms began to take place, following the model of Western educational systems with the influence of American protestant missionary groups and Korean reformist intellectuals. During the period from 1883 when the first modern school was established in the country to 1910 when the Japanese occupied Korea, important innovations were introduced in Korean education: education for common people; education of women; adoption of the Korean phonetic script, hangul, as the medium of instruction; teaching of such modern subjects as science, arithmetic, geography, and world history; provision of vocational education.

The basic aim of education was turned toward educating people who were equipped with practical knowledge and skills and able to play roles conducive to the development of the nation. Around the turn of the century the government began to establish new forms of modern public schools, such as elementary schools; teacher training high schools; foreign language schools in Japanese, English, Chinese, German, and Russian; vocational schools specializing in medicine, commerce and industry, law, mining, communication, and military training. According to unofficial document estimates, by 1910 there were approximately 3,000 schools including public, religious, and other private schools.

During 36 years (1910-1945) under the Japanese rule, the Japanese instituted a colonial form of the public education system. The major emphasis of education was placed on primary and low-level technical schools. The principal aim of the colonial education was to make Koreans loyal subjects of the Japanese Emperor and equip them with basic technical skills for low governmental and vocational posts. In the schools, the methods of rote memorization and disciplinary training were stressed to suppress critical thinking and independent inquiry of Korean students. In 1938, the teaching of Korean language and Korean history were banned and Japanese became the only instruction media in the school system as well as in public life at large. The discriminatory educational policy against Koreans by the Japanese government resulted in the lower enrollment of Koreans, particularly at the higher educational levels, than Japanese living in Korea. In 1938, one out of every three Korean children attended primary school, while almost every Japanese counterpart in Korea was enrolled in primary school. The enrollment disparity between Koreans and Japanese was more severe at the higher grades. Although, during the period of the Japanese domination, the base of the national educational system for common people was somewhat expanded and some of ideas and practices of modern education were introduced to the country, it was clear that Koreans did not have the opportunity to build a modern educational system to meet the genuine social needs of the nation.

After the liberation from Japan in 1945, the educational system of Korea was drastically reformed under the U.S. military government for the first few years and then under the democratic government of the Republic of Korea. The new system, based on democratic ideals, was established largely following the model of American education in the Education Law of 1949. The Education Law and Constitution guaranteed every citizen equal educational opportunities regardless of origin, religion, and sex and provided free, compulsory elementary education for all children. The new school system was introduced--6 years of elementary school, 3 years of middle school, 3 years of high school, and 4 years of college or university; new curricula and textbooks were prepared and distributed to students; thousands of teachers and administrators were trained or retrained. As Koreans' zeal for education of their children which had long been suppressed during the Japanese occupation was released, the school population exploded at all levels of education.

The invasion of north Korean Communists in 1950, however, suddenly paralyzed the developing Korean education. Three years of war between the South and North devastated the entire country. During the Korean War, educational facilities were severely damaged; over half of all school buildings were destroyed; the remainder required extensive rennovation; and many teachers and students were wounded or killed in battle. After the armistice in 1953, the educational system, as the other sectors of society, was rehabilitated with the active assistance of the U.S. government and various international agencies. In the post-war period, Korean education greatly expanded and developed, as described later in this chapter.

C. Korea's Educational System

Structure of the School System

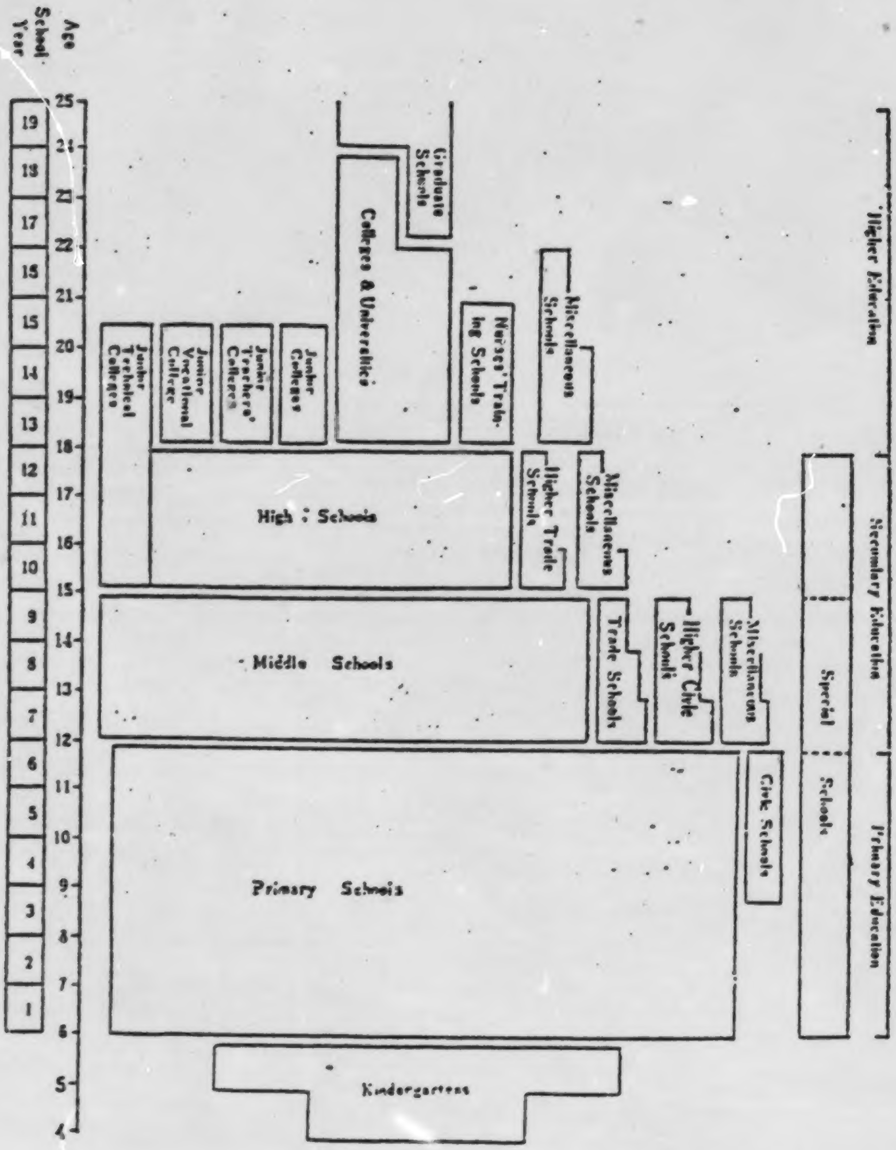
The Education Law of 1949 provides for the organization of education based on the 6-3-3-4 American education model as shown Figure 1.

Kindergarten education aims to facilitate mental and physical development of pre-school children aged 4-5. Almost all kindergartens are operated by the private sector. However, the curriculum, qualifications of teachers, and rates of fees for kindergarten education are regulated by the government. Today, only a very small segment of the children (5%) are enrolled in kindergartens. Most Korean children start their formal education at age of six, as they begin to attend primary schools. Primary education has been compulsory for every child in the 6-11 age group since 1948, but the constitutional requirement of free compulsory education was actually achieved by 1960, although parents in urban areas still pay certain minimal charges for elementary education.

Secondary education comprises two levels of schools: the lower level middle schools (grades 7-9) and the upper level high schools (grades 10-12). The middle school attempts to provide lower general education based on the foundation of elementary education. The aim of high schools, which are divided into academic and vocational (technical, agricultural, or commercial) schools, is to provide advanced general and vocational education based on the foundation laid by the middle school.

Before 1969 when the entrance examination to the middle school was abolished, the competition for the examination was so severe that almost intolerable emotional and physical burdens were placed on children and their parents. But such burdens have been considerably eased since an open-door policy for admission to middle schools was adopted in 1968. In order to enter high schools, however, the middle school students prepare and compete in an entrance examination. In 1974, the government reformed the high school entrance examination system to ease the competition, particularly for the more prestigious high schools in cities.

Figure 1. School System


Age
School Year
Graduate Schools
Colleges & Universities
Junior Technical Colleges
Junior Vocational College
Junior Teachers' Colleges
Junior Colleges
Nurses' Training Schools
Miscellaneous Schools
High Schools
Higher Trade Schools
Miscellaneous Schools
Middle Schools
Trade Schools
Higher Civic Schools
Miscellaneous Schools
Primary Schools
Civic Schools
Special Schools
Kindergartens
Higher Education
Secondary Education
Primary Education

It is generally recognized in Korea that the important function of the academic high schools is to prepare students for the college entrance examination. The curriculum and on-going educational processes in the academic high schools reflect the college preparatory function. The vocational high schools are intended to prepare students for employment in various jobs. But, due to the traditional values in which Koreans have cherished literary rather than manual work, the vocational schools could not attract the more capable students, despite the governmental policy to place an emphasis on the development of technical manpower required for the industrializing society.

In parallel with the regular school system, there are other schools, such as civic schools and trade schools. The civic schools and higher civic schools exist to provide an accelerated equivalent of formal (elementary of lower secondary) education for those who have missed the opportunity to attend the regular schools. As the regular school attendance has increased, the number of civic schools has gradually been reduced. There are trade schools and higher trade schools which aim to provide specialized vocational training for out-of-school youth seeking jobs but who are not equipped with technical skills. There are also special schools at the elementary and secondary levels which provide mentally and physically handicapped children with remedial education. But only a small fraction of handicapped children are currently enrolled in these schools because the facilities of special schools are very limited.

Higher education consists of two-year institutions, four-year colleges and universities, graduate schools, and other post-secondary vocational colleges. The academic structure of the higher educational institutions in Korea has been influenced by the American university, particularly during the Post-Liberation period. In 1978, there are the following institutions of higher education: 74 colleges and universities, 90 graduate schools, 133 two-year junior colleges and schools, and 12 other four-year schools. The majority of these institutions are private, supported largely by tuition and to a smaller extent by endowments. As the school population at the lower levels has rapidly increased, the competition among young people to attend colleges and universities, particularly the more prestigious institutions, has become serious. Recently, the increasing number of applicants for the college entrance examination has been recognized as one of the pressing social problems in Korea.

Administration and Finance

The central government agency responsible for administration of the educational system is the Ministry of Education (MOE). The overall authority in education including public and private sectors is highly concentrated in MOE. All higher education institutions are directly supervised by MOE, but MOE controls elementary and secondary schools through local boards of education. MOE has the responsibility for establishing major national policies and plans for education, appointing and supervising all high-ranking administrative officials, establishing and/or abolishing educational institutions higher than middle schools, constructing curricula for all levels of education, preparing textbooks for elementary and secondary schools, allocating the number of students to each department or school of higher education institutions, setting rates of tuition and other matters. The Ministry is responsible not only for formal education, but also for social (out-of-school) education, academic and athletic activities of the nation. The major sub-units of the Ministry are two offices and eight bureaus as shown in Figure 2. They include Office of Planning and Management and Office of School Supervisors, General Education Bureau, College Education Bureau, Teacher Education Bureau, Research Promotion Bureau, Industrial Education Bureau, Social and International Education Bureau, Physical Education Bureau, and Education Facilities Bureau.

Figure 2. Organization of Ministry of Education

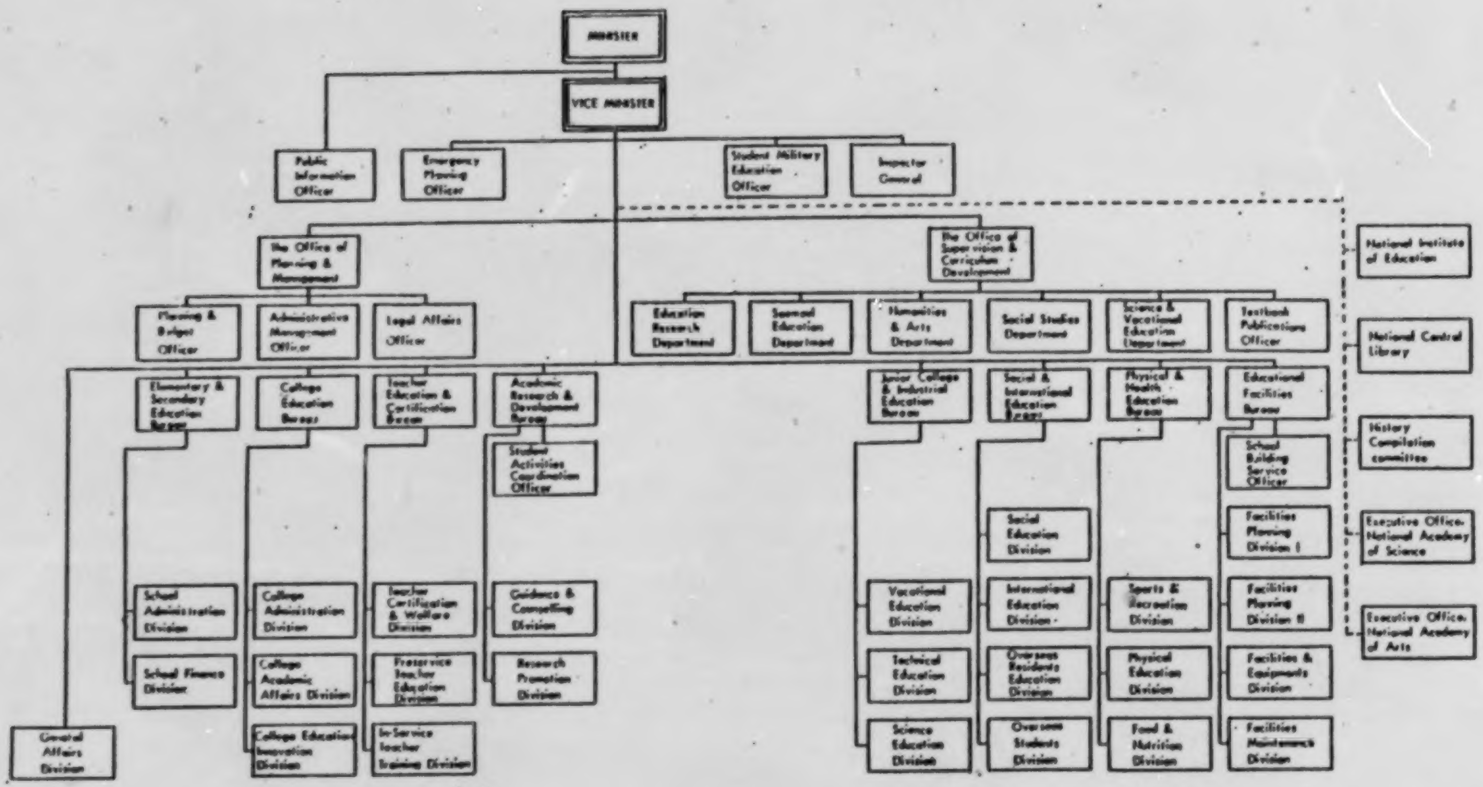

MINISTER
VICE MINISTER
Public Information Officer
Emergency Planning Officer
Student Military Education Officer
Inspector General
The Office of Planning & Management
The Office of Supervision & Curriculum Development
National Institute of Education
National Central Library
History Compilation committee
Executive Office, National Academy of Science
Executive Office, National Academy of Arts
Planning & Budget Officer
Administrative Management Officer
Legal Affairs Officer
Education Research Department
Second Education Department
Humanities & Arts Department
Social Studies Department
Science & Vocational Education Department
Textbook Publications Officer
Elementary & Secondary Education Bureau
College Education Bureau
Teacher Education & Certification Bureau
Academic Research & Development Bureau
Student Activities Coordination Officer
Junior College & Industrial Education Bureau
Social & International Education Bureau
Physical & Health Education Bureau
Educational Facilities Bureau
School Building Service Officer
School Administration Division
School Finance Division
General Affairs Division
College Administration Division
College Academic Affairs Division
College Education Innovation Division
Teacher Certification & Welfare Division
Preservice Teacher Education Division
In-Service Teacher Training Division
Guidance & Counselling Division
Research Promotion Division
Vocational Education Division
Technical Education Division
Science Education Division
Social Education Division
International Education Division
Overseas Residents Education Division
Overseas Students Division
Sports & Recreation Division
Physical Education Division
Food & Nutrition Division
Facilities Planning Division I
Facilities Planning Division II
Facilities & Equipments Division
Facilities Maintenance Division

Figure 3

Special City or Provincial Board of Education

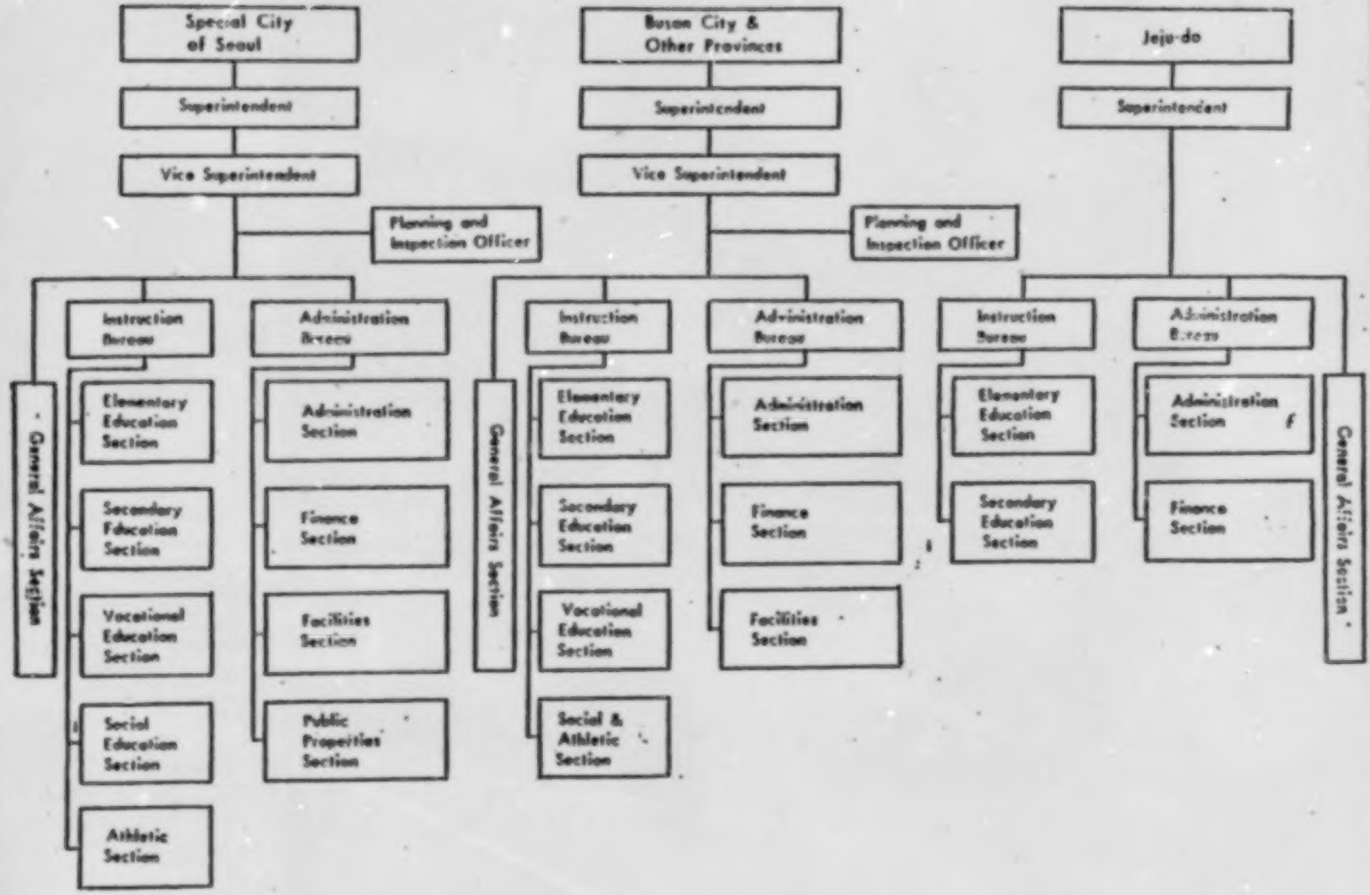

Special City of Seoul
Superintendent
Vice Superintendent
Planning and Inspection Officer
General Affairs Section
Instruction Bureau
Elementary Education Section
Secondary Education Section
Vocational Education Section
Social Education Section
Athletic Section
Administration Bureau
Administration Section
Finance Section
Facilities Section
Public Properties Section
Busan City & Other Provinces
Superintendent
Vice Superintendent
Planning and Inspection Officer
General Affairs Section
Instruction Bureau
Elementary Education Section
Secondary Education Section
Vocational Education Section
Social & Athletic Section
Administration Bureau
Administration Section
Finance Section
Facilities Section
Jeju-do
Superintendent
Instruction Bureau
Elementary Education Section
Secondary Education Section
Administration Bureau
Administration Section
Finance Section
General Affairs Section

Table 1. Number and Growth Rate of Students by Educational Level and Year

Year	Elementary		Secondary*		Higher**	
	Number in 1,000	Growth Rate	Number in 1,000	Growth Rate	Number in 1,000	Growth Rate
1945	1,366	100***	84	100***	8	100***
1960	3,621	265	792	949	101	1,292
1965	4,941	362	1,178	1,410	142	1,811
1970	5,749	421	1,909	2,286	194	2,476
1975	5,599	410	3,150	3,772	294	3,756
1978	5,604	410	3,753	4,468	416	5,200

* Includes students of middle schools, academic high schools, and vocational high schools.

** Includes students of colleges and universities, graduate schools, junior teachers' colleges, junior colleges, junior technical colleges, and junior vocational colleges.

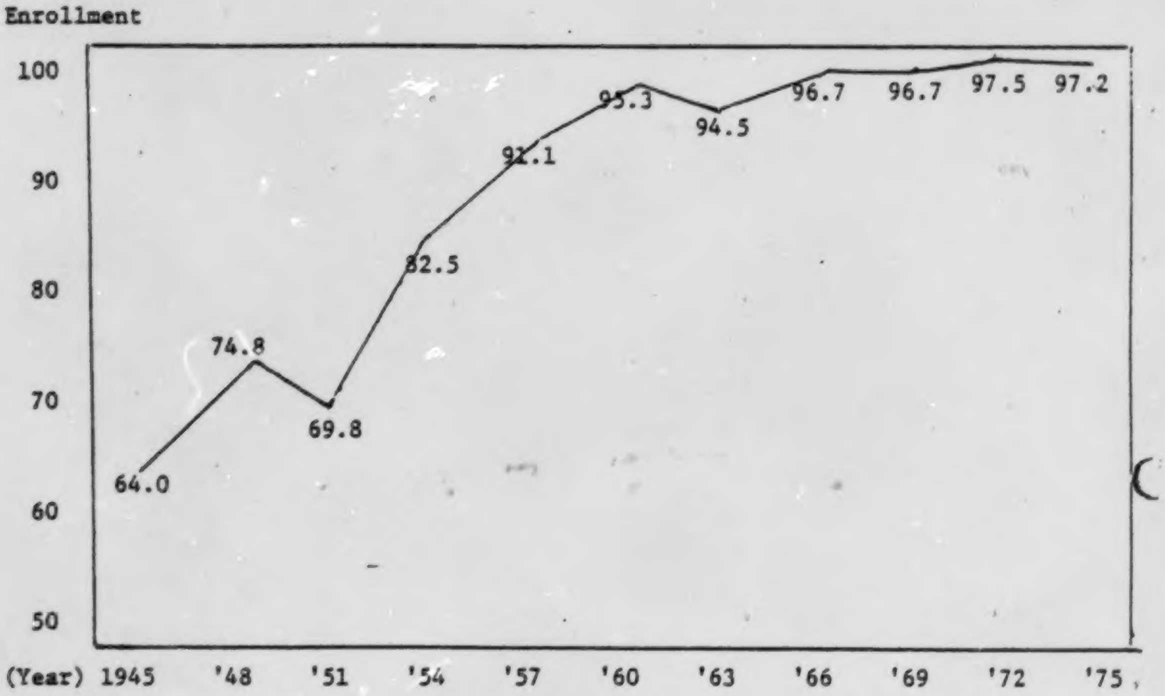
*** Index using 1945 as base year.

Sources:

For 1945-1975, Ministry of Education, Education in Korea: 1976

For 1978, Ministry of Education, Statistical Yearbook on Education: 1978

Figure 4. Trends in Enrollment at the Elementary Education Level



Sources:

For 1945-1951, Choong-ang Univ., A History of the Ministry of Education, p. 182.

For 1954-1960, Chun-suk Oh, New History of Korean Education, p. 66.

For 1963-1975, Ministry of Education, Statistical Yearbook on Education; 1972 and 1975

Table 2. Number of Schools and Teachers by Educational Level, 1945-1978

Year	Elementary		Secondary*		Higher**	
	Schools	Teachers	Schools	Teachers	Schools	Teachers
1945	2,834	19,729	165	3,219	19	1,490
1960	4,496	61,749	1,693	22,717	85	3,633
1965	5,125	79,164	1,909	33,175	199	6,966
1970	5,961	101,095	2,497	51,061	191	10,002
1975	6,367	108,126	3,119	82,672	268	13,758
1978	6,426	115,245	3,265	95,496	297	16,740

* Includes students of middle schools, academic high schools and vocational high schools.

** Includes students of colleges and universities, graduate schools, junior teachers colleges, junior colleges, junior technical colleges and junior vocational colleges.

Sources:

For 1945-1975, Ministry of Education, Education in Korea: 1976.

For 1978, Ministry of Education, Statistical Yearbook on Education: 1978 during the period 1945-1978. During this period, on the average four new schools per week were established and one higher education institution has been opened every one and half months somewhere in the relatively small territory of the nation.

Given the government's emphasis on expanding educational opportunities for people of all social classes, Korean education has experienced serious problems of classroom overcrowding despite the tremendous expansion of school facilities and teachers. Vigorous efforts to reduce the student/teacher or class ratio while expanding the student population have seemed to be "walking down on an upward escalator".

Table 3 shows that the classrooms of Korean schools have been extremely overcrowded and that there has been no apparent decline of class size at the elementary and secondary levels during the past few decades. Even with the large class size, Korean schools have been far short of classrooms, especially during the period from the Korean War to the mid-1960 s, as shown in Figure 5. In recent years, the classroom shortage in the elementary schools has been considerably reduced. However, the large class size of schools, particularly in urban areas, still remains as one of the most pressing educational problems in Korea.

The quantitative growth of Korean education has contributed to the expansion and equalization of educational opportunities for all people and the improvement of educational level of Koreans. Table 4 indicates that the percent of people with no formal education markedly decreased in a short span of one decade, while the percent of people with formal schooling significantly increased. It may be safe to note that the rising trend of the educational level of people can be extrapolated into the whole period of the past three decades.

Table 3. Number of Students Per Class and Teacher

Year	Elementary School		Secondary School	
	Per Class	Per Teacher	Per Class	Per Teacher
1945	54.0	69.2	52.9	25.9
1952	61.0	66.5	52.3	39.8
1956	55.5	55.5	56.2	37.4
1960	57.4	58.6	54.3	34.9
1965	65.4	52.1	52.7	35.5
1970	62.1	56.9	60.8	37.4
1975	56.7	51.8	62.2	38.1
1976	55.0	50.2	62.2	38.7
1981	51.0	-	58.5-59.9	-

Source:

For 1945-70, Ministry of Education, Education in Korea: 1974.

For 1975-76, Ministry of Education, Statistical Yearbook of Education: 1976.

For 1981, Economic Planning Board, The Fourth Five-Year Economic Development Plan: 1977-1981.

Figure 5: Comparison of Numbers of Classes and Classrooms of Primary Schools by Year

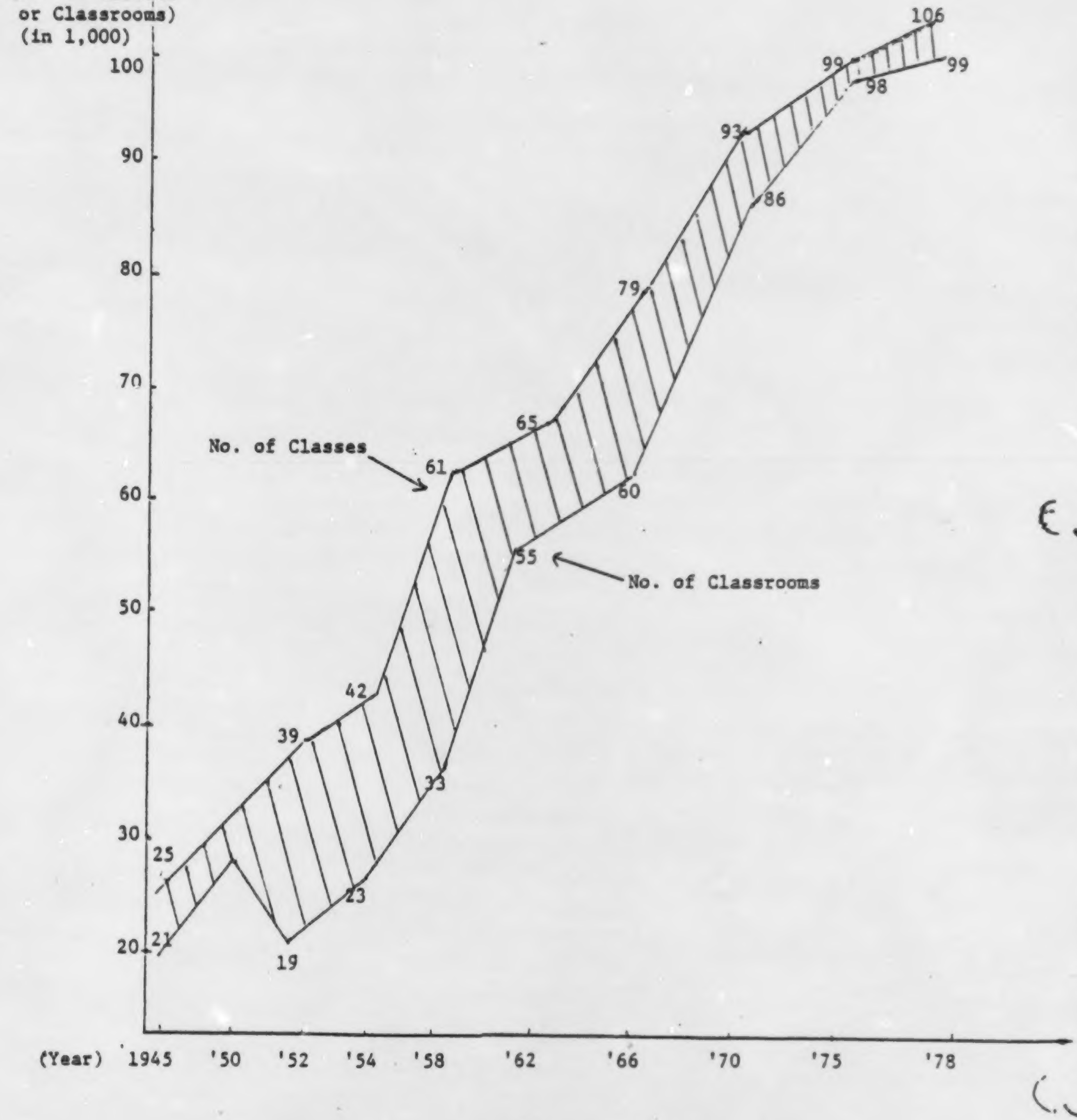


Table 4: Percent of Korean Population (Over 14 Years Old) by Educational Level

Year	Educational Level				
	No Formal Schooling	Elementary Education	Middle School Education	High School Education	Higher Education
1960	42.7	37.5	9.9	7.4	2.5
1966	31.4	38.6	15.0	10.6	4.4
1970	22.3	40.3	19.1	13.0	5.3

Source:

Yung-duk Lee, Shim-bok Kim, and Sang-joo Lee, The Contributions of Education to National Development, 1976. (Mimeo.) p. 96.

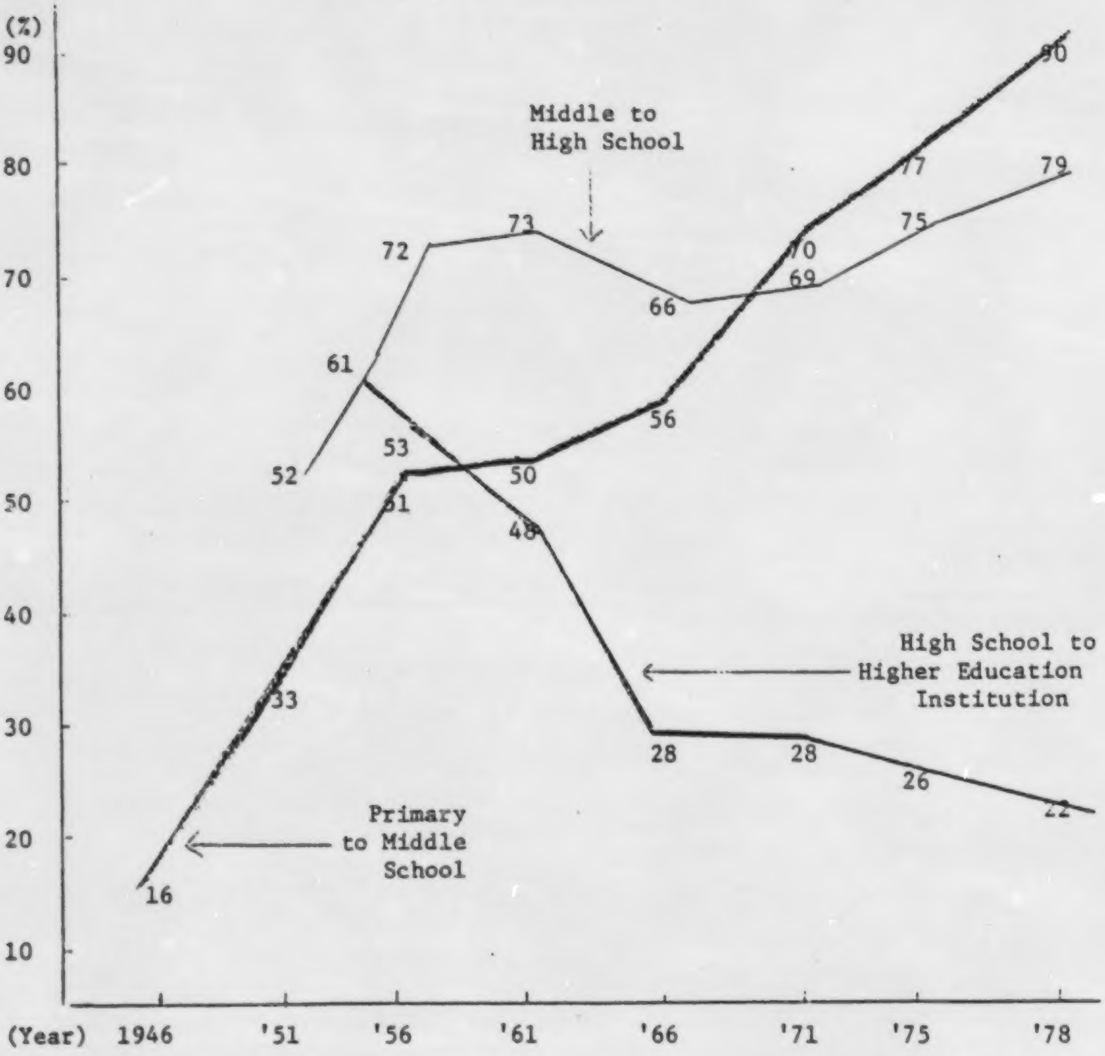
However, in terms of educational opportunity, Korean education is still facing formidable problems and tasks to be attacked in the coming years ahead.

First, there is a wide regional gap in quality of education between urban and rural schools. The concept of equal educational opportunities in Korea must be considered from the perspective of equalization of educational quality. Nationwide studies in the past have repeatedly revealed that school achievement of rural students is significantly lower than that of their urban counterparts. This regional gap might be caused by such multiple factors as: concentration of able, experienced teachers in urban schools; poorer educational facilities and lower educational expenses per student in rural schools; urban-oriented curricula taught to rural students; cultural and economic factors resulting in lower aspiration levels in rural areas. The lower quality of education of rural schools has exerted an influence on the rural-to-urban migration of rural people.

Second, a large number of handicapped children in Korea are deprived of educational opportunity. It is estimated that there are at least a half million physically and mentally handicapped children in Korea. But there are only 51 schools serving 7,700 students. Out of 51 schools, only 12 schools are public institutions, while the remaining 36 schools are operated by private sector. This fact suggests that special education has been a forgotten area of the government's educational and social policy.

Third, there are highly limited opportunities for continuing education for out-of-school youth. It is shown in Figure 6 that an increasing proportion of graduates of primary and middle schools have advanced to the higher levels of schools, but the proportion of the high school graduates advancing to higher education institutions has steadily declined. But in 1978, approximately a half million children and youth who were graduated from the elementary and

Figure 6: Percent of Graduates Advancing to the Higher School Levels



Source:

Yung-duk Lee, Shim-bok Kim, and Sang-joo Lee, The Contributions of Education to National Development, 1976, (Mimeo.) p. 106, 114.

secondary schools did not continue education at the higher level. For instance, as shown in Figure 7, out of young people aged 15-19 in 1975, 41% were the student group, 34% working youth, and 25% unemployed out-of-school youth. There is a real need for both working youth aspiring to further education and unemployed youth not adequately prepared for employment to have continuing opportunities for education. Currently, civic and higher civic schools, trade and higher trade schools, public and private vocational training centers, air and correspondence schools and colleges, and the on-the-job training programs of large industries are performing such continuing education functions. However, the facilities for continuing education are extremely limited and the standard of educational quality is generally low.

Qualitative Improvement of Education

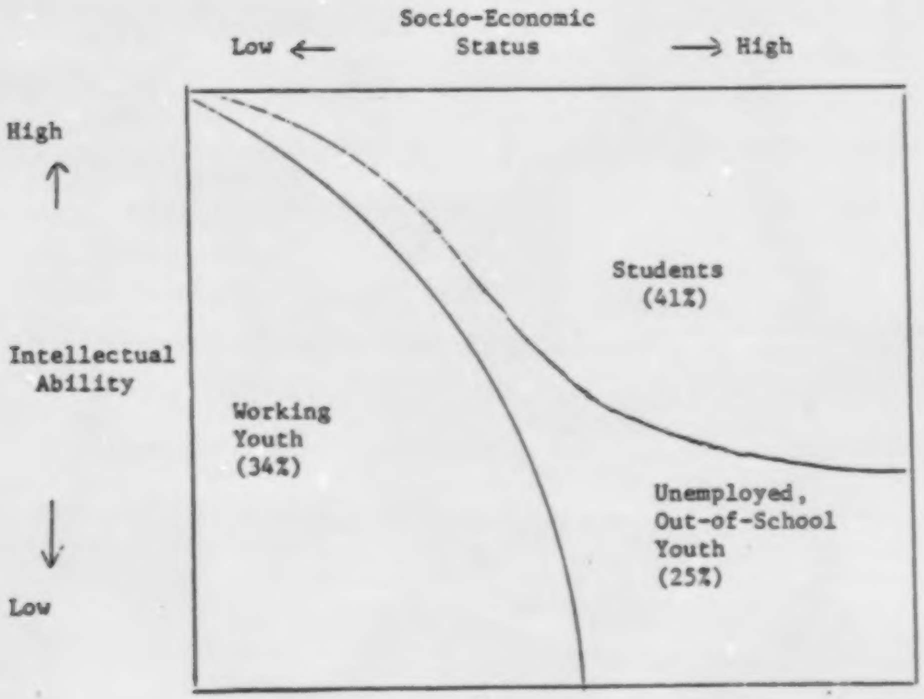
As already indicated, the explosive expansion of education has been made at the expense of a loss in quality of education in Korea. The dilemma of choice between the rapid quantitative expansion and the improvement of educational quality has been posed to educational planners and policy-makers. In recent years, they have begun to pay more attention to the qualitative improvement of education than in the past.

The teacher is one of the critical elements in determining the qualitative standard of education. Many teachers of Korean schools were inadequately prepared to perform the new roles of teachers in modern society. But there is a steady trend suggesting that the educational level of Korean teachers at the elementary and secondary levels has considerably increased in recent years, as clearly indicated by Table 5. About half the primary school teachers have attained at least two-year college education and most of the secondary school teachers have completed 4-year college education. Since 1962, when the required level of teacher education for elementary teachers was raised to require two-year

Figure 7: Three Groups of Korean Youth (Aged 15-19)

by Socio-Economic Status and

Intellectual Ability: 1975



Socio-Economic Status
Low ←
→ High
High ↑
Intellectual Ability
↓ Low
Students (41%)
Working Youth (34%)
Unemployed, Out-of-School Youth (25%)

Table 5: Educational Attainment of Teachers by Years of Study

		Percent of Teachers Completing Various Levels of Education				
	Year	Middle School (9 years)	High School (12 years)	Junior College (14 years)	College & University (16 years)	Beyond College & University (16+ years)
Primary School Teachers	1952	23.0	75.4	1.5	0.1	0.0
	1964	6.2	77.8	12.1	3.7	0.1
	1970	6.7	52.7	32.0	8.3	0.3
	1978	4.4	36.8	53.2	5.2	0.3
Middle School Teachers	1952	0.0	36.7	42.7	20.6	0.0
	1964	1.0	6.6	37.7	53.0	1.7
	1970	0.7	5.6	24.5	65.5	3.7
	1978	0.3	2.8	13.6	80.6	2.6
High School Teachers	1952	0.0	25.3	51.0	23.7	0.0
	1964	0.8	2.5	13.8	78.3	3.6
	1970	2.6	4.7	8.4	78.8	5.5
	1978	0.3	4.3	6.3	84.7	4.5
Total	1952	17.0	64.1	13.1	5.8	0.0
	1964	4.7	56.9	16.5	21.1	0.8
	1970	4.8	36.8	27.4	29.2	1.7
	1978	2.6	21.7	33.7	40.2	1.7

Sources:

Statistics from Ministry of Education, Statistical Yearbook of Education: 1964, 1970, and 1978.

junior teachers college education from normal school education at the high school level, the proportion of elementary teachers having post-secondary education has sharply increased.

However, it appears that teacher education programs in Korea are outmoded and ineffective even more than the programs for students. In-service education programs for teachers in many cases are not effective enough to keep pace with the advancement of knowledge. A recent study shows that Korean teachers in general are overloaded with about 30 hours per week on the average plus clerical work and that there are still a considerable number of secondary school teachers who teach two or three subjects, particularly in small rural schools. There is a growing concern that the teaching job is losing attractiveness to capable young prospective teachers.

Another element of educational quality is school curriculum. As mentioned earlier, the curricula of all primary and secondary schools, and junior technical colleges, both public and private, are prepared by MOE. For other types of schools and colleges, the Ministry only sets the framework of curricula which are further specified by the educational institutions.

The curriculum for primary schools includes moral education, Korean language, social studies, arithmetic, natural science, physical education, music, fine arts, and extra-curricular activities. In addition to these subjects practical arts is also provided for grades 4-6. The basic subjects taught in the middle school are moral education, Korean language, Korean history, social studies, mathematics, natural science, physical education, music, fine arts, foreign language (English), and vocational training (for boys) or home economics (for girls).

As the social context of education in Korea has turbulently changed in the past three decades, the school curricula have been revised once every eight years on the average, and the emphasis placed on the curricula has fluctuated also. An effort is made here to identify the major emphasis of school curricula by analyzing the policy slogans proclaimed by the Ministers of Education. The results of a content analysis of the Ministers' policy slogans is presented in Table 6. Throughout the period 1948-1973, the most emphasized themes in the Ministers' policy slogans are: (1) education to improve scientific knowledge and technical skills, (2) development of moral character, (3) education for anti-communism and national defense, (4) development of national identity and patriotic mind, and (5) education conducive to national and community development. In the opinion of many Korean educators these emphases have well reflected the social needs of Korea during the Post-Liberation period.

Still another element in the quality of education is the instructional methods of schools. Since 1945, Korean educators have made strenuous efforts to eliminate the authoritarian methods of teaching which had prevailed in the Japanese education system and to develop improved instructional methods for the new system. Various kinds of new teaching methods, mostly borrowed from the U.S., have been introduced to Korean education. For example, child-centered, experienced-centered, and community-centered learning, programmed instruction, individualized learning, discovery learning, mastery learning, audio-visual aids, and standardized tests, to name only a few, were introduced. However, these innovations in many cases have not fully been incorporated into Korean schools and consequently have not deeply influenced student learning in schools.

Even now in 1978, in Korean classrooms students spend most of their time in listening to their teacher's lecture and memorizing the contents of slim textbooks. The only instructional method that the teacher typically uses in a large size class is the "talk-and-chalk" method. Group discussions rarely

Table 6: Percent of Emphasis in Policy Slogans of the Ministers of Education by Themes (1948-73)

Themes Represented by Ministers' Policy Slogans	Percent of Emphasis 1948-61	1962-73	Total
1. National Development & Economic Growth	2	11	6
2. Community Education	2	6	3
3. Science & Technical Skills	17	21	19
4. Democratic Citizenship	6	2	4
5. Anti-Communism & National Defense	13	7	11
6. Autonomy of Education	5	0	3
7. Nationalism & Patriotism	14	6	10
8. Moral Character	10	23	16
9. Health & Physical Strength	12	4	8
10. Improvement of Quality of Education	6	8	7
11. Improvement of Educational Administration	7	4	6
12. Teachers' Responsibility	6	8	7
Total	100	100	100

occur, and questions from students are frequently disregarded in the large class. The chief source of motivation to learn for many students, particularly in the upper grades, is the threat of their possible failure in the entrance examination.

Finally, textbooks and instructional materials and aids are another important element of educational quality. The textbooks used in primary schools have been prepared by the textbook compilers of the Ministry of Education. Textbooks for middle and high school students were prepared by the individual authors, mostly college professors specialized in their respective subjects and approved by the Ministry. But the preparation of textbooks for secondary schools in Korean language, ethics, Korean history, and vocational subjects has been the responsibility of the Ministry. Although the quality of textbooks has gradually improved, the preparation of textbooks has not utilized scientific developmental processes until KEDI recently began to assume major responsibilities in the task.

As Table 7 shows, the utilization of technology in Korea schools has considerably increased in the 1970's. An increasing number of schools have acquired various types of audio-visual equipment. It is likely that this trend will continue in the future. At this juncture, an urgent need in relation to educational technology is to promote the development of software materials as well as hardware and their dissemination throughout the education system.

Table 7: Percent of Primary and Middle Schools
Having Selected Audio-Visual Equipment:
1971-1978

Audio-Visual Equipments	Elementary School		Middle School	
	1971	1978	1971	1978
Motion Picture Projectors (16 mm)	6.8	18.2	22.9	28.8
Slide Projector	59.3	80.3	60.0	87.5
Overhead Projector	5.0	54.0	14.5	70.7
Opaque Projector	2.1	14.3	25.1	30.6
Tape Recorder	40.8	96.1	78.9	92.8
Radio	81.1	98.7	80.8	96.2
TV Sets	24.8	59.9	17.2	70.5
Movie Camera	1.4	5.4	5.5	7.1
Still Camera	29.7	83.1	61.3	82.2
Slide Duplicator	2.0	0.5	3.1	5.8
Amplifiers	-	2.0	-	10.2
Generator	6.2	18.3	8.1	10.9

Sources:

Statistics from Ministry of Education, Statistical Yearbook of Education: 1971 and 1978

E. SUMMARY

Korean education is currently undergoing rapid change. During the past three decades, it has experienced an explosive quantitative expansion and has attempted to introduce various educational innovations and reforms to improve the quality of education. The Korean Educational Development Institute has come into being and has become a vital influence in the changing content of Korean education.

In the early 1970's, there were imminent needs keenly felt by educational policy makers and people generally to improve the quality of education available to all and to develop a viable education system able to effectively manage the expanding school population. There also was an urgent need to establish a national research and development center which could enable the educational system to continuously improve and to adapt to the changing environment.

CHAPTER III

THE ORIGINS OF THE KOREAN EDUCATIONAL DEVELOPMENT INSTITUTE

A. Impetus for Educational Change

Following the North-South Conflict of the 1950 s, Korea's recovery from the trauma of its recent history was accompanied by a rising concern for education. The nation's economic resurgence made it possible to confront educational problems and begin the long process of improvement in the system.

Beginning in 1968, the concerns about education and the readiness to commit new resources to the system set in motion those events which caused KEDI to be created.

A Long Range Educational Planning Committee, appointed to develop plans for educational reform, recommended that some type of special institution be established which could orchestrate reforms in primary and middle schools. The interest of the Committee and a growing concern over the minimal changes in education since Korea's liberation were instrumental in a decision of the United States Agency for International Development (USAID) to fund a study calculated to suggest a reform format. That study, conducted by the Florida State University (FSU Report), culminated in a report to which reference will be frequent in this document.

The FSU Report, apart from the specificity of its implementation, was extremely important. It presented an external analysis of the then current situation, recommended the establishment of the Korean Educational Development Laboratory (KEDL), and made rather dramatic specific suggestions for educational reform and defined the proposed KEDL role and function relative to the proposed reforms. It stimulated extensive discussion within government and among professional educators and academics during the months following publication.

The Florida State University Study - Systems Analysis for Educational Change: The Republic of Korea

The FSU study team consisted of professional educators in administration, technology, and teacher education; specialists in economics, manpower, and systems management; and a behavioral scientist. Other consultants, both American and Korean, were utilized.

The Report, published in April of 1971, argued for concentrating initial change efforts at elementary and middle-school levels. A new educational model was proposed which encompassed nine years of compulsory education. The new model had the following major characteristics:

1. Compulsory education through grade 9
2. New approaches to class size, pupil groupings, and differentiated teacher staffing
3. An emphasis on pre-occupational preparation at both elementary and middle school levels
4. A comprehensive national plan for appraisal and evaluation of the educational program
5. A radically different instructional delivery system with heavy dependence on a new national system of instructional radio and television, on individualized instruction, and on management of materials and pedagogy in the classroom.

The Report promised that the new educational model, properly implemented, would result in middle school products as well prepared academically as were the graduates of secondary schools of the day. It further presented evidence that the new model could be operated, once research and development processes were complete, at a lower per-pupil cost.

As the vehicle for the development and promotion of the new elementary-middle school model, the FSU Report proposed the creation of a Korean Educational Development Laboratory.

B. Problems and Progress

Development of the KEDI Model

The proposal to establish the new laboratory and to bring about major reforms in the Korean system of education was not universally accepted in the education community and in government circles. While there were many who felt that the need for reform in Korean education was urgent and that the creation of the new educational research and development laboratory would be an important step in improving education, there were others who were strongly opposed. To some, the new laboratory represented a duplication of mechanisms for educational change already existing in public and private educational institutions and organizations. Others viewed the proposal with hostility because it was a product of foreign research and because it argued for a technologically driven curriculum and teaching mode. They looked upon the proposal as an intervention into the traditional assumptions about education in Korea and as an alien experimentation with Korean children. Frequently expressed was a fear that the proposed educational reform would bring about an erosion of Korean traditions and culture.

For a period of about 18 months after the publication of the FSU Report, the education community as well as many government officials were engaged in serious discussions concerning the idea of systematic change in Korean education and of a new instrument to effect that change. In these discussions there was a conscious effort to deal with the evidence the report presented for a need for educational change rather than with the specific proposals.

Thus some of the objections born of distrust of foreign intervention were isolated.

As an important outcome of these discussions the proponents of the proposal developed the conviction that the new laboratory should be more than a vehicle for the establishment of a new elementary-secondary model of education; and that it should become a comprehensive research and development center that would have major responsibility for a wide range of tasks: basic and applied research, educational policy studies, educational planning, curriculum studies, and others. During this period of discussion and debate there was evidence of a gradual acceptance by many leading academics and other leaders in public life of the evidence in the FSU Report of the need for educational change, of the belief that such change could be accomplished without sacrificing traditional Korean values, of a realization that the national goals could be served effectively through educational reform and that the proposed laboratory would be a viable instrument for the improvement of education in Korea.

One event of importance was an October, 1971, conference in which participants included seven professors from Seoul National University and one from Yonsei University, the directors of the Korean Institute for Research in the Behavioral Sciences and the Central Educational Research Institute, and three representatives of USAID/KOREA.

The report of that conference, as well as other unpublished documents of that era, was very critical of the past performance of the Ministry of Education. The civil service bureaucracy and attendant salary restrictions were seen as limiting the involvement of a well prepared and creative staff. The conference affirmed and reaffirmed the need for the creation of an organism, free of restrictions seen as inherent in MOE operations, which would assume research and development responsibilities in education. Interestingly, the group also recommended that KEDL perform implementation functions as well.

As core activities of a new KEDL, the conference compiled a list which included the following:

1. Identification of specific strengths and weaknesses of the current system
2. Development of a new curriculum
3. Development of an instructional system and materials
4. Conducting of pre-pilot studies and evaluations
5. Carrying out large-scale experimentation and program revisions
6. Orchestrating diffusion of successful programs throughout the system
7. Maintenance of quality levels achieved in experimental programs

Obviously, the basic contentions of the FSU Report found support among those participating in the conference. However, the conference discussions tended to broaden the potential role of KEDL beyond that proposed in the FSU Report. The Florida State study clearly set out a program to reconstruct educational delivery systems at elementary and middle school levels and provided a strong economic rationale for its recommendations. In contrast, the conference deliberations appeared to suggest a need to examine the FSU proposals through indigenous studies and strategy development.

The conference further suggested that KEDL develop a group of activities to support its core activities. They included:

1. Mobilization of research resources in existing institute and universities
2. Development of its own staff
3. Training of teachers

4. Involvement of foreign specialists and coordination of their input
5. Reexamination of school and administrative arrangements
6. Dissemination of information

The Elementary-Middle School Development Project

In November of 1971 came the first official recognition of the incipient KEDI. At that time the Minister of Education authorized Dr. Yung Dee Lee to develop a plan for the Elementary-Middle School Development Project.* Thus, at the point of specific action, there was a return to the primary proposal of the FSU Report as the focal point of reform.

Quite naturally, the USAID presence in Korea was interested in seeing the FSU Report implemented on some substantial dimension, and Dr. Lee and his colleagues directed their considerable energies toward developing a proposal to earmark a portion of an expected rice loan arrangement between the governments of Korea and the United States.

The resultant proposal argued that it was time for qualitative improvement in Korean education and that a comprehensive research and development agency was essential to qualitative change within feasible financial resource parameters. Although entitled "The Korean Elementary-Middle School Educational Development Project 1972-1977", the proposal's statements of purpose and structural descriptions would be appropriate under any one of several other titles. Thus the Project focus was clear but equally clear was the intent to create a permanent comprehensive research and development agency in education, one of whose efforts would be the E-M Project.

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* Referred to hereafter as E-M Project.

Establishment of KEDI

The potential of the loan proposal for creation of a new interface between the traditional educational system and change was realized when the National Assembly approved the USAID rice loan and education sector participation in it. That event, on July 31, 1972, was quickly followed by the official registration of the Korean Educational Development Institute as a special foundation on August 30, 1972. Although there was one more legal step to be taken (the enactment and promulgation of the KEDI enforcement decree on October 11, 1973), to all intents and purposes the struggle of creation was over.

The AID loan provided $7.5 million dollars in support for KEDI, of which $5 million was in won and $2.5 million in dollars, the latter to be used for the purchase of technical assistance, participant training, and equipment. Additional support came through an EXIMBANK-related loan of $7 million for the purchase of transmitting station equipment.

By the time KEDI became a legal entity, its proponents and its resistors had been through a political-professional process of extreme importance. Its education professionals had had time to learn to accept as legitimate and respond to a complete range of political, educational, and resource questions. The natural impatience of the educators to get on with needed improvement had to be curbed in the interests of building a solid base of support.

The statements of system inadequacies in the FSU Report had been reiterated. A sense of urgency had been built up and maintained. Issues passed through debate and were restated to live with political realities. The systemic emphases of the FSU Report survived but implementing strategies were modified. The E-M Project remained as a descriptor of a long-range and broad-based programmatic effort utilizing advanced ideas and methods. But it was no longer the only thrust to be made nor was it to be the only criterion upon which success judgment would be made. The idea had time to mature along with its idealogues.

KEDI had precedent in Korea. Other ministries had "think-tank" adjuncts. There were, among others, the Korean Development Institute and the Korean Institute of Science and Technology. In addition there was the highly respected research and development institute informally associated with Seoul National University, the Korean Institute for Research in the Behavioral Sciences, which spawned many of those participating in the development and operation of KEDI. Once the top officials of government had agreed that education should be a full participant in Korean development, the precedents could be followed.

KEDI was created as a quasi-autonomous agency of the Ministry of Education. The idea for such an agency started with an unstructured recommendation of the Council for Long Range Education Planning, was reinforced and given structure and purpose in the FSU Report, survived a difficult long-term period of reexamination and definition, and emerged as a legal, functioning reality. KEDI's struggles toward viability then began.

Mission of KEDI

The KEDI mission began to take form during the progress of the FSU study. Many of the original assumptions of purpose in the FSU Report reappear in the Project Loan Proposal previously cited. In general, mission and goal statements appearing in more recent KEDI documents remain faithful to earliest conceptualizations.

The background for statements of KEDI purposes can be found in the documents on Korean education of the 1968-73 period. They note the quantitative demand on education created by the Korean respect for and faith in learning and the imbalance of access to schools between rural and urban locations. They complain of inadequately prepared teachers, regional qualitative differentials, outmoded pedagogy, limited instructional materials and the like. In some quarters, education is seen as producing a heavy drain upon the economy without producing a measurable impact on manpower and economic development.

KEDI was a product of a generalized concern for the quality and impact of education. Presumably, then, it will be expected to find ways to reduce those inadequacies pointed out by so many. KEDI's creation was an important event, carrying with it the varied hopes of a variety of publics. The FSU Report made a strong argument for the E-M Project on economic as well as educational grounds. USAID is certain to continue to ask questions of cost effectiveness although, ultimately, it is not the United States which must be satisfied. Korean academics will expect KEDI to produce and implement research findings. Teachers will expect improvement in the environment in which they teach, and parents and students will expect new excitement in schools and greater material evidence of education's utility.

Too, KEDI was created as a relatively autonomous agency. That means that it is not under civil service constraints in staff employment and can generally behave in independent ways. It has freedoms not enjoyed by regular units of the Ministry of Education. In principle it can attract prestigious scholars, have ready access to counterpart research and development centers around the world, and perhaps even attract substantial external funding. Therefore, pressures for effecting dramatic reforms in the educational system will be further increased.

Of course, KEDI was not designed to control (nor, in all probability, will it ever have power to control) the factors which can assure full implementation of its research and program ideas. In such a circumstance, the KEDI mission must be carefully stated and its general goals must be considerate of what is possible.

A short, comprehensive mission statement did not appear in any of the documents reviewed. However, a mission statement has been deduced from the following general purposes stated in the Project Loan Proposal:

1. To determine educational ideals and objectives which reflect the cultural heritage, social reality, and future direction of the Korean society
2. To reformulate and systematize educational content to correspond to educational objectives
3. To develop and utilize modern educational methods, facilities, and materials to achieve an effective and economically efficient program of education
4. To establish a comprehensive research and development agency to assist the Ministry of Education in formulating educational policy for the nation.

Statement in other documents and those made by officials of KEDI appear to accept 1972 purposes as still current.

The statements of purpose broaden the KEDI arena of activity considerably beyond the E-M Project focus proposed in the FSU Report. It may be argued that any diversion from a highly integrated project-type effort may result in *ad hoc* response to *ad hoc* demands and keep the E-M Project from whole-hearted implementation. In a setting in which the exercise of control over critical factors is possible, that argument has merit. But apparently KEDI leaders and advisors were sensitive to the dangers of linking KEDI existence completely to the E-M Project even though they were quite aware of the appeal of the E-M Project to decision makers, funding sources, and a growing professional constituency. Greater room to adapt was apparently seen as desirable. KEDI clearly saw its future as a general research and development center and sought to keep its options open for developing increasingly reciprocal relationships with the MOE.

Too, the FSU Report made a strong point of the economic efficacy of the E-M Project and projected a long-term effect upon per pupil costs and percentages of the GNP going to education. KEDI statements of purpose are noticeably less specific in regard to economic impact of KEDI presence.

It appears, then, that statements of purpose made at the time of KEDI origins were designed to provide some operational space in which to maneuver and the independence to create Korean responses to Korean problems.

A derived broad mission statement, then, may be stated in the following way: *The Korean Educational Development Institute serves the Ministry of Education in the analysis of educational needs in Korea and in the invention and trial of effective and efficient programs and structures for the improvement of the educational system.*

Summary

The FSU Study was probably the most important event in education in post-war Korea. The Report presented very clear and specific proposals for change within a framework of assumptions about the economics and purposes of education. There was suddenly a focus for the generally held dissatisfactions with education and for the disparate views of what might be done.

The specificity of the FSU Report proposals provided a base for judging resource needs for a massive effort at educational change. Even those who did not share the assumptions inherent in the report could accept the need for change. Those who did share the assumptions soon learned that they could not implement proposed change in an environment of value-based hostility.

Subsequent to the FSU Report publication were enabling events associated with legal and funding questions. The processes which led to those events were also essentially political. One one hand was the USAID desire to have a dramatic example of technical assistance success. On the other hand was a Korea trying to reconstruct an identity long influenced by Japanese and American ideas. At its creation KEDI was much less a creature of evolution--of negotiation with an environment which included American influence as an item of interest but not of determination.

Finally, KEDI was an idea whose time had come. Educational inadequacies, as is usually the case, came to general attention only after they were made obvious by growth in the economic sector and by the demands placed upon the system by the re-emergency of an ancient people. The precedent of other think-tank organizations in the public sector was an important one. As the FSU Report noted, the human resources were present and increasingly able to do for education what other institutes were doing in other fields.

As will be seen throughout this document, KEDI is evolving as a comprehensive educational research and development center--something neither advocated nor considered desirable by the FSU study. Much of the substance of the original Report remains, however, even while KEDI becomes more and more an indigenous response to its unique environment.

CHAPTER IV

ORGANIZATION, MANAGEMENT, AND OPERATIONS

A. Formal Organization

Previous sections of this document have established the historical and political setting in which KEDI exists and have outlined KEDI's mission and related task areas. Within that environment KEDI must do what it is expected to do. In this chapter the major categories of structure and administration are described as they exist within KEDI and appropriate questions and issues are raised.

KEDI has made several structural changes since its founding in order to adjust to changes in key personnel, increased size and complexity, and changes in tasks. However, one constant in organizational structure is the Board of Trustees.

Board of Trustees. The Board, created as the policy body for KEDI, is officially charged with review and approval in the following areas:

1. Budget development and implementation
2. General program planning
3. Appointment and dismissal of KEDI officers
4. Property acquisition and disposition
5. Debt assumption and management
6. Changes in Articles of Incorporation
7. Changes in By-Laws
8. Dissolution of the corporation
9. Matters referred to the Board or required by changes in the Articles of Incorporation

The Board is chaired by the Minister of Education and the Vice-Minister is a member. The Ministry of Education* representation has also included the Director, Office of Planning; Director, Science Education Bureau; and the Director, Elementary Education Bureau. KEDI is always represented by its Director and by its chief Auditor. A National Assemblywoman has been on the Board since 1973 as has the President of Hong Ik University. There has always been a secondary school principal among the membership.

Although KEDI has reasonably autonomous status, it is dependent upon the MOE in many ways and is increasingly seen as the MOE's agency of research and development. The Board of Trustees membership reflects that relationship as well as recognizing the need for ties to the National Assembly and to higher and general education constituencies. It is a group representative of the political and professional-political linkages necessary to KEDI survival.

One reason why organizations have general Board of Trustees does not appear to be observed by either KEDI's Board charter or its membership. That reason is to provide the organization with a continuing source of professional advice and counsel. However, given the quasi-legal status of the Board of Trustees, the nature and composition of its membership may not be an open question.

Since this appears to be so, KEDI should create an advisory group, made up of influential professionals, to supplement the essentially legal purposes of the Board of Trustees. The advisory group would be convened to consider the professional programs and activities of KEDI, to examine alternative directions, and to interpret KEDI to the professional-academic communities of the nation.

Administrative Officers. KEDI is headed by a President, chosen by the Board of Trustees. The incumbent, Dr. Yung Dug Lee, was associated with the

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* Referred to hereafter as MOE.

KEDI movement from the beginning and was KEDI's first director. Dr. Lee is technically on leave from his professorial post at Seoul National University.

Second in command is Mr. Ok Woo Nam, Vice President. Mr. Nam also directs internal business and management offices. The Director of the Research and Development Department, Dr. Se Ho Shin, and the Director of the Educational Broadcasting Department, Dr. Kuk Bom Shin, complete the top administrative staff.

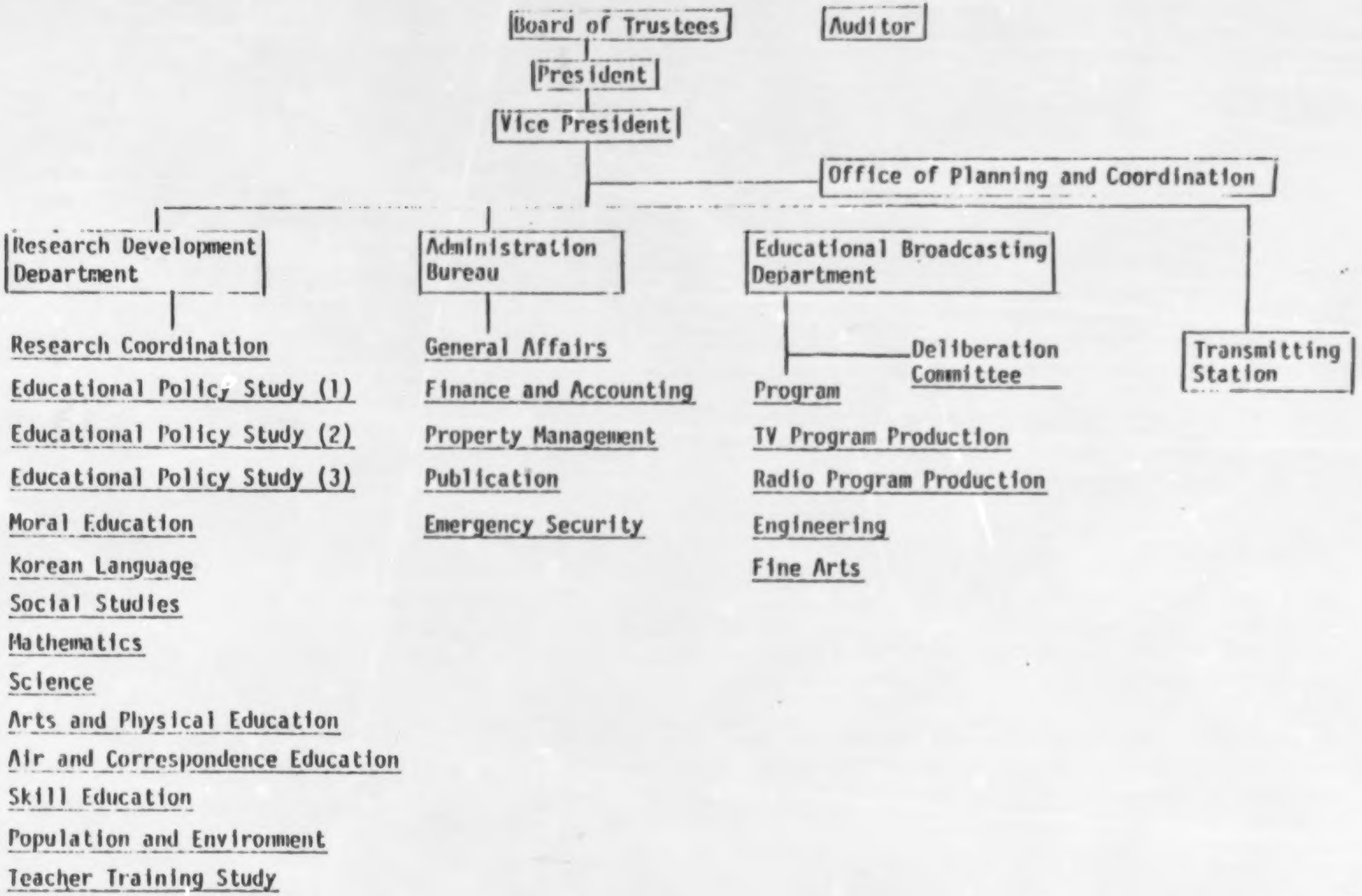
Figure 1 shows the organization as of June- 1978. It places the Office of Planning and Coordination in a staff office position and the Administration Bureau of the same level as the programmatic departments. Since the failure of T-Com technology for television and radio, the Transmitting Station has been a paper unit only.

Advisory Committees. Apart from the Board of Trustees there are a series of internal committees: Planning, Publications, Personnel, Personnel Evaluation. In each case the membership consists of high level administrators. There is also a Deliberation Committee within the Educational Broadcasting Department which includes non-administrative personnel and which attempts to coordinate production with research and development activities.

Early in 1978, KEDI convened a large group called the National Commission to Evaluate the New Educational System. The Commission was made up of university professors, teachers, college professors, MOE personnel, representatives of schools and provincial offices, and KEDI staff. The Commission membership was divided into three groups, each to concentrate on one aspect of system evaluation: the instructional and school management system, materials and radio and television programs, and process of research and results determination. A summary of the report of the Commission is in Chapter VI, Section K.

Figure 1

KEDI Organization - June 1978


Board of Trustees
Auditor
President
Vice President
Office of Planning and Coordination
Research Development Department
Administration Bureau
Educational Broadcasting Department
Transmitting Station
Research Coordination
Educational Policy Study (1)
Educational Policy Study (2)
Educational Policy Study (3)
Moral Education
Korean Language
Social Studies
Mathematics
Science
Arts and Physical Education
Air and Correspondence Education
Skill Education
Population and Environment
Teacher Training Study
General Affairs
Finance and Accounting
Property Management
Publication
Emergency Security
Deliberation Committee
Program
TV Program Production
Radio Program Production
Engineering
Fine Arts

Organization Structure Change: *1972-1978*. A number of charts in the Appendix show the formal organization of KEDI at its various stages. In the beginning, KEDI was organized under a Director and two Associate Directors, one for administration and one in charge of those functions related to educational programs. In 1975, in anticipation of full operation of the T-Com system, the Technical Support Bureau was moved from the programmatic side to the administrative side. The rationale for the change was that the administrative load between Associate Directors would be equalized and that the problems of purchasing of broadcast equipment and its installation would be better controlled.

At the same time an Office of Planning and Coordination, reporting directly to the KEDI Director, and a Property Management Section under the Administration Department were created. These were moves seen as required by increased complexity, staff size, and the operation of the broadcast facility.

By 1976 the Associate Director for Administration had been moved into the line as Deputy Director and departmental designations were made for Research and Development and for Educational Broadcasting. Except for some intra-departmental changes no further functional reorganization was apparent in June, 1978.

Organization Unit Roles. The specific programs of the major departments are discussed in detail in other chapters of this report. In general the Research and Development Department and the Educational Broadcasting Department exist in order to deliver those products and services which relate to KEDI purposes. All other organizational units exist to support the two Departments.

The Research and Development Department is a complex of specific task areas. It houses the various contract projects, continuing and ad hoc research activities, and the subject matter groups responsible for the creation and preparation of materials for the E-M Project.

The Broadcasting Department because of technical problems and the failure of the T-Com technology, has been limited to program planning and production activities. However, except for brief in-house examples, there has been no airing of programs produced. The department supports the contracted Air and Correspondence School and its program production has been for E-M Project purposes.

The Planning and Coordination Office has been charged with planning of administrative and financial policy. It has sub-offices for Budget, Regulations, Loan Management, and Public Relations. Auditing and inspection duties and library management are also included.

The Administration Bureau is a straightforward business office operation. It provides accounting services, purchasing and properties control, publications business management, and personnel management. It further manages transportation and janitorial personnel and equipment as well as guard personnel.

Both the Planning and Coordination Office and the Administration Bureau have heavy responsibilities in assuring compliance with governmental regulations.

B. Organizational Problems and Issues

In many institutions in many cultures organizational structures do not tell very much about how the organization functions. In KEDI there are relatively few deviations from authority line relationships. The President does deal directly with Directors of departments on substantive program matters but the Vice-President is clearly in the authority line on internal administrative affairs.

The President is the prime funnel through which KEDI staff reach outside academic and political forces and through which those forces are interpreted within KEDI. As a former university professor and as an insider to the early efforts to create KEDI, the President has significant relationships with certain echelons of the government; the Vice-President has relationships with other echelons. Therefore, it is clear that the description of the Vice-Presidency as an internal administrative and business role holds only within KEDI.

There is very little lateral movement across structural lines, a condition which creates problems of coordination, particularly for the complex variety of products and services associated with the E-M Project. Coordination between the people who develop print instructional materials and those who develop radio and television programs appears to be very difficult. There is only occasional evidence that research results in policy studies are influential in the design of instructional materials. The functional groups within departments work in comparative isolation.

In a complex institution such as KEDI, required to respond to its own discoveries as well as to the expectations which brought about its establishment, reliance on formal vertical structures is seldom satisfactory. They tend to force attention upon communication and authority lines which may, at any point, be artificial and dysfunctional in programmatic terms. Therefore, it is often necessary to create a horizontal organization with purely program coordination functions. Normally, such horizontal coordination may best be assigned to a single person whose position is that of advocate for a specific program rather than authoritarian--a staff position instead of a line position.

As a case in point, all units in the structure perform vital tasks relating to the E-M Project. That project remains the key effort of KEDI and drives the Institute at the current state of its development. Therefore it is important that the E-M Project receive attention which crosses administrative jurisdictions without prejudice.

Horizontal coordination should be program related and, in any specific case, should last only as long as the program itself or until such time as vertical structures can be devised which collect all program functions into one administrative unit. As suggested above, the latter situation is rare in complex educational institutions.

There may be several reasons for the extreme structural formality in KEDI. First, the culture generally displays strong respect for rank, position, and maturity. Second, KEDI perceives itself as an academic institution rather than as a civil organization and the status rules of academe generally apply. Third, KEDI and KEDI personnel are so task oriented and pressures for production are so great that there simply is no time to go beyond the structurally defined authority lines.

Since KEDI tends to behave according to described structures, it may be more important than in many instances that the structure be as rational as it can be. If formality of organization are expectations of the Korean culture then desired horizontal coordination can be formalized.

If it is academic assumptions which help create a high level of formality those assumptions should apply only at organizational points at which roles are very like academic roles--within the Research and Development Department, for example. The usual academic rank requirements of degrees, research, and the like are not useful in the broadcasting field in which technical and particular professional skills are needed.

If the third possible reason for formality of structure applies it would be better to reduce task expectations and production in order to assure the coordination of effort from contributing units across managerial lines.

KEDI administrators are currently discussing problems of organization and coordination, and at the same time deliberating upon the proper structural placement of new or expanded roles and tasks for KEDI. Two events are primarily responsible for re-examination at this time:

1. Korea must start over in its attempts to blanket the nation with educational radio and television. A land-based system is being planned, one which will be coordinated with existing networks. It is probable that the Korean Broadcasting System will operate the educational system for delivery of programs. The programming will be "educational" rather than "instructional". That is: (a) it will not be directly keyed to classroom teaching and learning (b) it will be aired at out-of-school hours (c) its potential audience will go beyond the elementary and middle-school population.

   This marks a distinct departure from the proposals of the FSU Report and from the efforts of KEDI over its years of promotion of the E-M Project. The control relationships with the new approach to delivery of radio and television programs is undesired, but the change provides an opportunity to reassess KEDI structure.
2. The MOE has asked KEDI to assume the functions of the Textbook Compilation Burea. That request will expand KEDI roles beyond the E-M Project in curriculum development and make it possible to justify expanded research activities.

In response to the above events and to the lessons of KEDI experience, organizational changes are being proposed to meet the following objectives:

1. To reflect the advancing status of KEDI as the comprehensive research and development arm of the Ministry of Education.
2. To clarify the separation of research and development functions from system-wide implementation and delivery systems.
3. To create functional groups of personnel which suggest required talents and preparation.
4. To share the administrative load among high-level professional personnel.

C. A Proposed Organizational Structure

The proposed changes in the organizational structure grow out of plans originating in KEDI with some modifications suggested by the study team.

Educational Broadcasting. The activities associated with broadcasting should be operationally separated from the research and development of KEDI, now that KEDI is unlikely to manage the entire radio and television system. One approach would be to create a separate corporate entity, an educational broadcasting station, which would be a straightforward technical operation to interface with the new land-based transmission system and organize the essential linkages with the Korean Broadcasting System (KBS). The new corporation would remain an arm of the MOE for programming content and would relate to KEDI research and development roles for program focus and content. It is proposed that the KEDI President also serve as President of the new entity. The facilities for the station exist on the KEDI main site.

KEDI Administration. Following earlier statements of concern and principle relating to clear authority lines, proper roles of administrative services, and the need for horizontal coordination, the following proposals are made:

1. The Office of Planning and Coordination does not appear to function in reference to its title except in the regulatory sense. It would appear that planning and coordination functions are assumed by top administrators and only low-level expectations remain for the Office. Many of its functions are difficult to separate from those of the Administrative Bureau. It is suggested that the Bureau assume those overlapping tasks and that planning and coordination processes be developed without formal office designations. Subsequent suggestions will relate to those processes.
2. There has been discussion of the membership of the Board of Trustees. One proposal has been to have vice-ministers of concerned government ministries as its members. In Korea, where such boards serve primarily political purposes, KEDI may see excellent reasons for such a change. There could well be a loss of perceived association with the educational community, however, and with KEDI's parent, the MOE.
3. It is proposed that, regardless of the make-up of the Board of Trustees, KEDI name the most respected scholars and professionals available to permanent advisory group. If the Board of Trustees should contain only political memberships, the advisory groups should include key MOE personnel as well as other educators of recognized competence.
4. KEDI has consistently placed its Administrative Bureau on the organizational charts in a position parallel to the

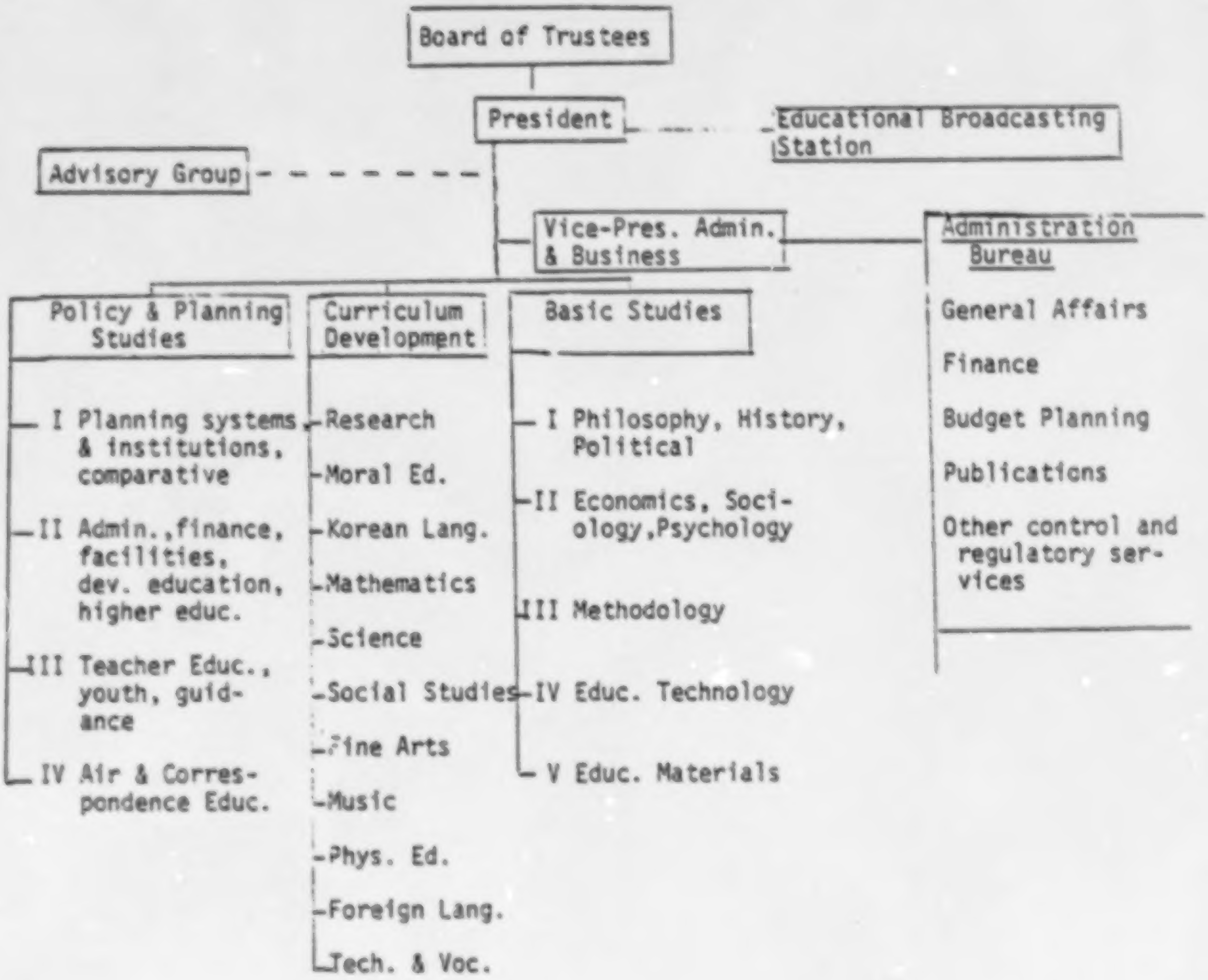
professional departments. It is suggested that the Bureau be indicated as a service unit to the decision makers and to the professional operations. If possible, diagrams should reflect the way the organization actually works. If the professional departments are going to have direct access to the President rather than go through the Vice-President, that should be shown. If the Vice-President's internal responsibilities are to be strictly in administrative and financial arenas, the position could be designated as Vice-President for Administration and Business Affairs. Such a title would reduce the importance of the position, but would perhaps more clearly indicate the actual role and responsibility.

KEDI Research and Development Units. KEDI is proposing to organize three departments to replace the current Research and Development Department and to allow for expansion of research and development coverage. The proposed departments are tentatively designated as Educational Policy and Planning Studies, Curriculum Development, and Basic Studies. Such a structure seems perfectly appropriate, provided the horizontal coordination discussed earlier is organized.

Should the proposed changes occur, a new organization structure would resemble the chart in Figure 2.

Figure 2

Proposed Organization*


Board of Trustees
President
Educational Broadcasting Station
Advisory Group
Vice-Pres. Admin. & Business
Administration Bureau
General Affairs
Finance
Budget Planning
Publications
Other control and regulatory services
Policy & Planning Studies
I Planning systems & institutions, comparative
II Admin., finance, facilities, dev. education, higher educ.
III Teacher Educ., youth, guidance
IV Air & Correspondence Educ.
Curriculum Development
Research
Moral Ed.
Korean Lang.
Mathematics
Science
Social Studies
Fine Arts
Music
Phys. Ed.
Foreign Lang.
Tech. & Voc.
Basic Studies
I Philosophy, History, Political
II Economics, Sociology, Psychology
III Methodology
IV Educ. Technology
V Educ. Materials

* This proposed organization plan is basically a plan developed by KEDI and under consideration as of July 1978. It does contain some slight modifications proposed by the study team.

D. A New Organizational Structure

Since the departure from Korea of the study team in early July, 1978, deliberations have continued relative to the proposed changes in organizational structure. As a result of these deliberations and with the approval of the Board of Trustees and the Ministry of Education, a new organizational plan became effective January 1, 1979.

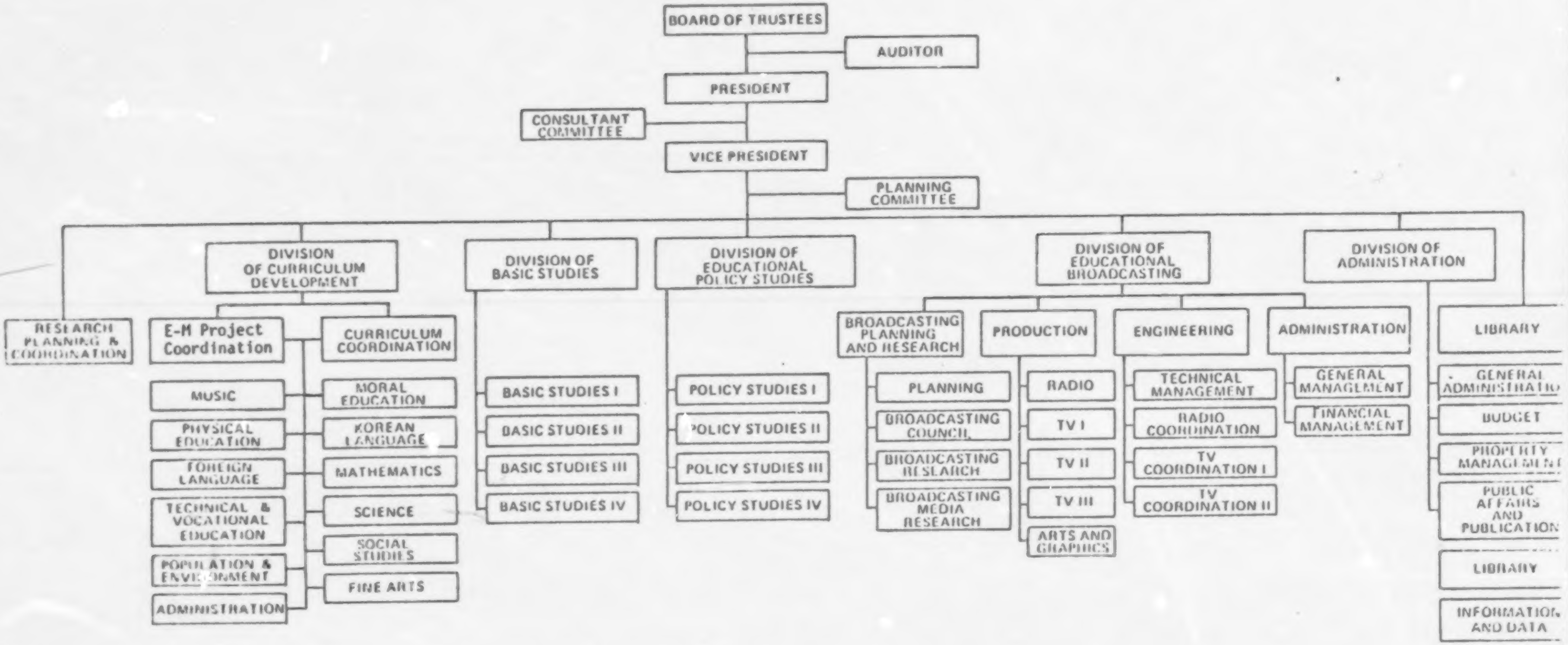
This new organizational plan shown in Figure 3, incorporates much of the general intent of the proposed plan as shown in Figure 2. However, in the new structure are a number of features which place added emphasis on the specific and emerging responsibilities of KEDI as it has assumed the role of a comprehensive national educational research and development institute.

Management. The new plan retains the general format of the earlier organization of KEDI with the Board of Trustees as the policy-making group and the usual independent auditor. Overall management is under the direction of the president and vice-president and the directors of five divisions: Curriculum Development, Basic Studies, Educational Policy Studies, and Administration. It is noted that in the new structure, the original Research and Development Department has been sub-divided into three divisions.

Two important developments in terms of advisory groups have occured. A Consultant Committee composed of representatives from higher education, from public education, from relevant government agencies, and from other domains will provide advisory and consultant service to the President of KEDI. A Planning Committee, composed of divisional heads and other senior staff, will have responsibility for consultation and planning in terms of KEDI goals, policies, and projects. This new committee will provide for significant staff input into KEDI planning and operation.

Figure 3

ORGANIZATIONAL STRUCTURE OF THE KOREAN EDUCATIONAL DEVELOPMENT INSTITUTE
Effective January, 1979 (Masoner, 1979)


BOARD OF TRUSTEES
AUDITOR
PRESIDENT
CONSULTANT COMMITTEE
VICE PRESIDENT
PLANNING COMMITTEE
RESEARCH PLANNING & COORDINATION
DIVISION OF CURRICULUM DEVELOPMENT
E-M Project Coordination
CURRICULUM COORDINATION
MUSIC
PHYSICAL EDUCATION
FOREIGN LANGUAGE
TECHNICAL & VOCATIONAL EDUCATION
POPULATION & ENVIRONMENT
ADMINISTRATION
MORAL EDUCATION
KOREAN LANGUAGE
MATHEMATICS
SCIENCE
SOCIAL STUDIES
FINE ARTS
DIVISION OF BASIC STUDIES
BASIC STUDIES I
BASIC STUDIES II
BASIC STUDIES III
BASIC STUDIES IV
DIVISION OF EDUCATIONAL POLICY STUDIES
POLICY STUDIES I
POLICY STUDIES II
POLICY STUDIES III
POLICY STUDIES IV
DIVISION OF EDUCATIONAL BROADCASTING
BROADCASTING PLANNING AND RESEARCH
PLANNING
BROADCASTING COUNCIL
BROADCASTING RESEARCH
BROADCASTING MEDIA RESEARCH
PRODUCTION
RADIO
TV I
TV II
TV III
ARTS AND GRAPHICS
ENGINEERING
TECHNICAL MANAGEMENT
RADIO COORDINATION
TV COORDINATION I
TV COORDINATION II
ADMINISTRATION
GENERAL MANAGEMENT
FINANCIAL MANAGEMENT
DIVISION OF ADMINISTRATION
LIBRARY
GENERAL ADMINISTRATIO
BUDGET
PROPERTY MANAGEMENT
PUBLIC AFFAIRS AND PUBLICATION
LIBRARY
INFORMATION AND DATA

Division of Curriculum Development. This new division will have overall responsibility for all tasks relating to curriculum development, preparation of teaching-learning materials, and the management of the Elementary-Middle School Development Project. Under the leadership of the director of the division the allocation of tasks is as follows:

E-M Project Coordination

1. Planning, managing, monitoring E-M Project
2. Management of pilot schools and in-service teacher training
3. Coordination of system improvement
4. Distribution of teaching-learning materials

Curriculum Development Coordination

1. Curriculum research
2. Textbook development
3. Direction of subject matter teams
4. Development of teaching-learning materials

Subject Matter Teams (specific subject fields)

1. Curriculum research
2. Textbook development
3. Materials development for E-M Project
4. Textbook teacher guides
5. In-service training of teachers

Division of Basic Studies. The allocation of tasks in this division under leadership of the division director is as follows:

Basic Studies I

1. Educational ideas, philosophy, goals
2. Human development (physical, social, intellectual)
3. Foundations (historical, political, psychological, social)

Basic Studies II

1. Surveys, action research
2. Evaluation
3. Curriculum design/patterns/instruction

Basic Studies III

1. Research methodology
2. Educational statistics

Basic Studies IV

1. Educational technology
2. Sociology, social problems

Division of Educational Policy Studies. The director of the Division of Educational Policy Studies will be responsible for the administration of four operating units, Policy Studies I, II, III, and IV. Various policy responsibilities, including those listed below, are allocated within the four units.

1. Middle and long range planning
2. Educational system studies
3. Manpower supply and demand
4. Educational policy development and evaluation
5. Educational administration, finance, facilities
6. Educational policies, international comparative studies
7. Educational policies for Koreans abroad
8. Air and Correspondence High School

Division of Educational Broadcasting. It is important to note that, unlike earlier organizational plans and unlike the plan proposed in the summer of 1978, no provision is made for actual transmission of radio and television programs. This change is the result of decisions made that KEDI will have responsibility for the planning and implementation of a comprehensive program of educational radio and television and will not be responsible for the actual transmission of programs as originally intended. According to present decisions the actual transmission of programs developed by KEDI will be the responsibility of the national broadcasting system. There will be, however, an advisory committee appointed in the office of the Prime Minister to establish general policies relative to KEDI's role and the broadcasting system role. Members of the committee will probably be drawn from KEDI, the Ministry of Education, the Ministry of Culture and Information, and other relevant areas of education and government.

The various functions of KEDI in educational broadcasting are as follows:

Planning and Research

1. Broadcast planning
2. Broadcast research
3. Media research
4. Broadcast Council

Production

1. Radio
2. Television I (school programs/teacher training/Air and Correspondence High School
3. Television II (pre-school education, vocational-technical education, daily life improvement, moral education)
4. Television III (technical support to I and II, still pictures, film making, dubbing foreign films)
5. Art and Graphics

Engineering

1. Technical management (equipment, maintenance, etc.)
2. Radio control
3. Television I control
4. Television II control

Administration

1. General administrative support services
2. Financial and facilities management

Division of Administration. Responsible for the tasks of this division are the following units which report to the division director.

1. General administration
2. Finance and budget
3. Property management
4. Public Affairs and publications

In addition to the five major divisions are two other units both of which report directly to the President and Vice-President. They are:

1. Research Planning and Coordination (responsibility for overall planning and coordination of research activities of KEDI throughout the five major divisions)
2. Library (responsibility for the normal services of a library in a research and development institute plus the repository of data developed as a result of KEDI studies and activities).

D. Management and Operations

Organizational structures look very much alike around the world. Administrators perform within a consistent set of categories: they develop internal policies and procedures, direct human and financial resource allocation, make decisions, resolve problems, regardless of the societal content of the organization.

How organizations work, how the processes of administration are orchestrated, and how administrative personnel behave, however, are subject to societal and cultural influences. Wherever comment appears in this section of the report, then, that should not be considered negative criticism. It is intended as a means to raise questions for KEDI officials which may be worth their consideration as KEDI develops. KEDI is a change-inducing organization. It cannot cause change in an educational system if societal and cultural norms make up its criteria for management behaviors. Nor can the organization survive and succeed if its administrators behave in ways inappropriate to its environment. In essence, that is the dilemma of development administration.

In this section of the report the status of KEDI resources are noted, and questions relating to administrative process styles are raised.

Financial and Budgeting Management. KEDI submits a budget to the MOE in June-July of each year. The budget is prepared in KEDI for each unit. The process is reported to be as follows:

1. Each unit head develops, with his staff, a budget
2. Budgets are collected and analyzed in the Office of Planning and Coordination
3. An aggregate budget is prepared for administrative review
4. The annual budget is submitted to the Ministry of Education for review by its Director of Planning and Management

5. The budget is submitted to the Economic Planning Board (EPB) for review
6. The budget then goes to the Committee on Education and Culture in the National Assembly
7. Finally, the budget is acted upon by the National Assembly in general session.

Although the KEDI budget is at all times visible as a separate item, it is submitted to the National Assembly as a part of the requirements of the Ministry of Education. Thus budgetary review within the Ministry is important because it is at that point that KEDI's place in the MOE priorities is determined.

KEDI operates on a cash basis. That is, budgets are built each year from requirements for operating expenditures, debt retirement and interest payments, and for capital costs in buildings and long-life equipment. There is no fund for the amortization of space and equipment costs.

Since KEDI is supported primarily from public funds there is no pressure to establish procedures to establish and maintain construction and equipment replacement funds which accumulate each year according to an amortization schedule. Indeed, it is unlikely that the Republic of Korea Government (ROKG) would agree to an annual allocation of monies to be applied to long-term future costs.

Although financial policies are developed by the top management team, jurisdiction over fiscal matters and the statement and clarification of financial policy belongs to the Vice-President. Day-to-day management is vested in sub-units of the Office of Planning and Coordination: Budget, Loan Management, and Auditing and Inspection. Disbursement, accounting, and control are responsibilities of the Administration Bureau.

Through its Board of Trustees KEDI has negotiated two support loans. The first, resulting from the AID Loan Proposal referred to earlier, made $7.5 million available to establish KEDI and launch the E-M Project. Recognizing that a project-related loan could not be sensibly spent within a designated time frame KEDI arranged for the creation of a foundation-type fund to be created for $5 million of that amount. To date, only interest on that fund has been spent for KEDI operations. The remaining $2.5 million formed the basis for a contract with Florida State University and also permitted financing foreign exchange for the purchase of goods and services in support of the E-M Project.

The AID Loan No. 489-H-084, known as the Rice Loan, made up to $17 million available to ROKG in foreign exchange commodity costs. That document clearly includes the Education Sector Pilot Project (KEDI's E-M Project) as a recipient of dollars generated. It was further defined in a letter from the AID Director to the Minister of Education and the Education Planning Board, dated November 17, 1972. That letter earmarks loan money and proceeds generated by financial actions to KEDI "in the amount required".

AID Loan No. 489-H-085 made available the $2.5 million as a cash allotment to the Ministry of Education but available to KEDI. Interest is due each six months on the amount expended. Interest rates applicable are two percent for the first ten years and three percent thereafter with the first payment on principal due nine and one-half years after the first interest due date and final payment within forty years.

KEDI used the $2.5 million to provide broadcasting equipment ($1,630,000), technical services ($300,000), publications ($90,000), an emergency fund ($450,000), and a travel fund ($30,000).

KEDI then entered into a contract with Florida State University (MOE/FSU

Contract #1, dated March 31, 1973) for technical assistance and advising services. The original amount of $299,987 was increased by amendments (#1, August 12, 1974, to $397,454 #2, October 25, 1974 to $627,450). A third amendment did not increase the total amount. The contract, a cost-reimbursable type, called for assistance in technical specification for equipment, graduate level training, short-term consultants, and logistical support.

An additional loan credit line was negotiated through the Economic Planning Board for $7 million to finance the construction and equipment of the transmitting station for KEDI. The aggregate is made up of:

1.	Western Pennsylvania National Bank credit (EQUI Bank)	$2,790,000
2.	Export-Import Bank of US credits (EXIM Bank)	2,790,000
3.	Exporter Credit (T-Com Corporation)	697,500
4.	Bank of London (LIB)	722,500

The current status of loans is shown in Table 1. The plan is to accelerate repayment if possible. The ROKG permits KEDI to accrue budget surpluses toward debt retirement or for other approved purposes.

Because of the failure of T-Com technology, T-Com Corporation has agreed to compensate Korea in the amount of $13 million. Two million will be a cash compensation and $11 million will be in equipment for the planned land-based system.

Financial Support Sources and Levels. Since KEDI became fully operational, its primary support has come from the government, as shown in Table 2. Significant amounts are generated by interest income and from contracted services.

The increase in amount of government subsidy has been steady except for budget year 1977. That was a result of finally abandoning T-Com technology as the radio-television delivery system. Income from projects has increased both in amount and as a percentage of total support levels.

Table 1

KEDI--Debt Retirement Schedule

In U.S. Dollars

	Amount	Date	Interest Rate	Repayment 1975	1976	1977	1978	Total	Outstanding
Loan No. 4353 (7,000,000 US$)									
Equibank	2,790,000.	5/10/73	6%	697,500.00	697,500.00	697,500.00	348,750.00	2,411,250.00	358,750.00
Eximbank	2,790,000.	5/10/73	Prime Rate + 1%	-	-	-	-	-	2,790,000.00
T-Com (Export Credit)	697,000.	5/10/73	Prime Rate + 1.5%	87,187.50	87,187.50	87,187.50	43,593.75	305,156.26	391,843.75
Bank of London	722,500.	5/10/73	Euro Rate + 1.5%	144,500.00	144,500.00	144,500.00	72,250.00	361,250.00	361,250.00
AID - 489-H-084 (Won)	5,000,000.	12/28/72							
AID - 489-H-084 (US$)	2,500,000.	9/13/72							

Table 2

KEDI Financial Support--1972-1978

In 1000 Won

	1972-73		1974		1975		1976		1977		1978		Total 1972-78	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Government Subsidy	57,000.	14.15	1,063,000.	76.32	1,917,304.	79.51	2,428,894.	82.43	2,212,507.	60.90	3,642,480.	70.69	11,331,185.	71.03
Interest Income	220,000.	54.64	264,000.	18.95	264,000.	10.95	264,000.	8.96	326,059.	8.97	364,000.	7.05	1,702,059.	10.66
Long-term Borrowing	95,000.	23.59	-	-	80,000.	3.32	-	-	-	-	-		175,000.	1.10
Project Income	30,000.	7.45	54,000.	3.88	81,872	3.40	231,456.	7.85	497,037.	13.68	778,735.	15.07	1,673,100.	10.49
Other Income	637.	.02	11,000.	.85	68,194.	2.82	22,271.	.76	226,917.	6.25	121,785.	2.36	451,604.	2.83
Carry-Over from Previous Year	-	-	-	-	-	-	-	-	370,649.	10.20	249,551.	4.83	620,200.	3.89
	402,637.	100.00	1,392,800.	100.00	2,411,370	100.00	2,946,621.	100.00	3,633,169.	100.00	5,166,551.	100.00	15,953,148.	100.00

Support-level evidence suggests that the ROKG and its MOE view KEDI, its record, and its potential very seriously. As of June, 1978 there was the expectation that new functions discussed earlier related to curriculum development would be funded with an additional 2+ billion Won* for 1979.

Financial Resource Allocations. In the presentation of information on costs certain terms are used which may be differently interpreted than is intended. To prevent misunderstanding, those terms are defined here.

1. Operating Expenses. Those costs required for the day-to-day operations of an organization, and which normally exclude costs of buildings, land, and long-life equipment. Since KEDI operates on a completely "cash" basis and no amortization of buildings or equipment is made yearly, the following analyses include all expenditures except those used to reduce the principal of debts.
2. Direct Costs or Expenses. Those costs directly required for program or product delivery without reference to costs of operating the total organization. Examples of such expenses are salaries, materials and supplies.
3. Indirect Costs (Overhead). Those costs of operating the total organization which services the programs and products but which are not identified by expenditure with programs and products. Examples of indirect costs are libraries, general administration, and utilities.
4. Debt Service. Interest charges on outstanding debt.

Table 3 summarizes operating expenditures by KEDI program categories for each of its budget years. Direct and indirect costs are identified. Table 4 shows the same information in percentage terms. These tables are condensed from yearly summaries shown in the Appendix.

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* Current rate of exchange is approximately 480 Won to one U.S. dollar.

Table 5 summarizes all costs which can be associated with the E-M Project. Since the E-M Project was a comprehensive one and caused the attempted development of broadcast-transmission systems as well as the need to borrow. Table 6 charges all associated costs to the E-M Project.

The following points call attention to particular facts. Currency conversion basis: 480 Won = $1 US.

1. KEDI will have expended about 12 billion Won ($25 million US) by the end of 1963. Of that amount 1.6 billion Won (13.4%) is for indirect costs and 10.3 billion Won (86.6%) is for direct program expenses.
2. Contract activities have generated nearly 1.7 billion Won and have cost 1.9 billion Won. If the average indirect cost rate were applied costs would be 2.2 billion Won; a loss from income producing projects of .5 billion Won more accurately states the situation. Only in years 1974, 1975, 1976 did contract work pay for itself. The reasons for deficit contract work are primarily related to KEDI's contracting role in MOE projects. It is hardly politic to insist on full direct and indirect cost reimbursement from the agency which provides more than 70% of the budget! In general MOE assumes that KEDI can absorb tasks with existing personnel, particularly for short-term contracts. It is not important, except for clarity of cost accounting. It can be very important, however, if burdening existing staff creates qualitative problems in delivery of contracted services or in regular KEDI task fulfillment.
3. Of costs related to the E-M Project, 6.7 billion Won (including interest expense) has resulted from efforts to create, program, and

Table 3

KEDI Budget Summaries--Operating Expenses
1973 - 1978

In 1000 Won

	1973	1974	1975	1976	1977	1978	Totals
Policy Studies	22,965.	15,687.	27,910.	35,908.	81,930.	73,861.	258,261.
Contract Projects	15,580.	39,969.	70,865.	207,456.	727,516.	858,193.	1,919,579.
*E M Project	209,638.	440,566.	755,813.	1,900,548.	1,736,090.	3,119,745.	8,162,400.
Total Direct Program Costs	248,183.	496,222.	854,588.	2,143,912.	2,545,536.	4,051,799.	10,340,240.
Planning and Coordination	-	-	-	51,253.	61,281.	46,833.	169,367.
Operations and Management	94,887.	119,936.	107,423.	227,658.	308,196.	295,175.	1,253,275.
Miscellaneous	15,127.	24,099.	22,541.	73,143.	17,949.	121.785.	274,644.
Total Indirect Costs	110,014.	144,035.	129,964.	352,054.	387,426.	473,793.	1,597,286.
Total Operating Expense	358,197.	640,257	984,552.	2,495,966.	2,932,962.	4,525,592.	11,937,526.

*E-M Project Costs include expenses of Broadcasting and Transmission Departments and interest expenses on loans associated with E M Project capability.

Table 4

Percentage of Total Operating Expenses by KEDI Activity Category

1973 - 1978

	1973	1974	1975	1976	1977	1978
Policy Studies	6.41	2.45	2.83	1.44	2.79	1.63
Contract Projects	4.35	6.24	7.20	8.31	24.81	18.96
E M Project	58.53	68.81	76.77	76.15	59.19	68.94
Planning & Coordination	-	-	-	2.05	2.09	1.26
Operation & Management	26.49	18.73	10.91	9.12	10.51	6.52
Miscellaneous	4.22	3.77	2.29	2.93	.61	2.69
	100.00	100.00	100.00	100.00	100.00	100.00
% Direct Costs	69.29	77.50	86.80	85.90	86.79	89.53
% Indirect Costs	30.71	22.50	13.20	14.10	13.21	10.47
	100.00	100.00	100.00	100.00	100.00	100.00

76 - Input for Transmission slowed

Table 5

E-M Project Costs--Current Operating Expenditures By Departmental Allocation

In 1000 Won

	1973	1974	1975	1976	1977	1978 Budget	Totals	% of Total
Bureau of System Development	9,359.	15,922.	37,664					
Bureau of Instructional Materials Development	82,183.	65,227.	62,840.					
Research & Development Department				166,253.	539,947.	385,299.		
Bureau of Planning & Coordination - E-M Project	31,526.	14,962.	42,811.					
Total Implemented E-M Costs	123,068.	96,111.	143,315.	166,253.	539,947.	385,299.	1,453,993.	17.81
Bureau of Technical Support	21,098.	134,000.	202,692.					
Broadcast Department				1,170,311.	765,284.	726,004.		
Transmission				185,374.	87,142.	1,770,812.		
Total Broadcast & Transmission Costs	21,098.	134,000.	202,692.	1,355,685.	852,426	2,496,816.	5,062,717.	62.03
Interest Expense	65,472.	210,455.	409,806.	378,610	343,717	237,630	1,645,690.	20.16
Total E-M Project Costs	209,638.	440,566.	755,813.	1,900,548	1,736,090.	3,119.745.	8,162,400.	

transmit radio and television for instructional purposes. That represents 32.2% of E-M Project expenditures. The amount (approximately $14 million US) will be offset by the $13 million US indemnification by T-Com Corporation. Thus the loss of investment in technology to date is not financial but in the delay of E-M Project full implementation. Further costs may have been incurred in loss of credibility but KEDI performance in non-media research and development and other activity has minimized that cost.

4. KEDI will have expended, by the end of 1978, about 5.3 billion Won (app. $11 million US) in activities not directly related to technical delivery systems. The as yet undetermined costs of the land-based system will have to be added to that amount and subsequent KEDI budgets before total costs for an effort originally expected of KEDI can be determined.

Physical Facilities and Land. KEDI is housed in a site of 53,680 square meters. Its buildings were constructed specifically for KEDI (See Table 6). The main building, which houses administrative offices and research and development operations, is becoming crowded and does not have enough conference space. Because of the distances from city facilities, a cafeteria is maintained.

Total space on the main site amounts to 11,473 square meters with more than 3000 square meters in the building which houses broadcasting facilities. Total cost for main campus construction has amounted to just under 874 million Won ($1.8 million US). (NOTE: Data on inflation rates appear in Chapter IX).

KEDI carries land holdings on its books to a total of 198,000 square meters. (See Table 8). Most of it (137,650 square meters) was for a remote transmission

Table 6

KEDI--Physical Facilities
(As of June, 1978)

	Year of Construction	Cost (in 1000 Won)	Area (Sq. Meters)	Additions Year	Additions Cost	Additions Area	
KEDI Main Campus							
R and D Building	1974 - 75	313,079	8,389	1976	6,950	-	Interior construction
				1977	3,580	-	" "
Broadcasting Building	1974 - 75	470,969	3,136	1975	43,570	-	" "
				1976	20,187	-	" "
Guard Room	1974 - 75	900	16				
Watch Tower	1976	4,430	33				Guard Booth and Defense Storage
Micro-Wave Tower	1974 - 75	10,380	-				
Total Main Campus		799,758	11,473		74,287	-	
Training-Housing Site	1978 - ?	155,000	2,640				Under construction. Planned for staff housing, in-service teacher training, and office space.
T-Com. Transmitter Site	1973 - 76	203,729	27,050				The T-Com Site has been virtually abandoned.

site for other purposes in the future. Holdings over which KEDI has clear jurisdiction include the main campus and a 6,900 square meter site purchased in 1976. (See Table 7).

It is planned to develop the new site as a conference and training center and to allow some personnel housing. Both international and domestic conferences will be held there and research and development related teacher training is planned.

Human Resource Management. The Personnel Committee is composed of an Associate Director as chairman and not more than five additional members who are at the level of departmental administration. The committee is charged with internal policy development, advice to the President on matters he presents, and selection of staff members for meritorious awards. Decisions require a two-thirds vote of members present.

Appointment of staff personnel is for one-year terms. KEDI employs new staff members according to examination results, work ability, career experience, educational background, and personal interests. The principal criterion for employment of new permanent staff members is performance on a public competitive examination. Only people with the following qualifications are exempt from the examination, subject to final decision by the President of KEDI:

1. Holders of doctoral degrees.
2. Those with special employment experience related to specific openings.
3. Persons with 3 or more years' experience in a government office, provincial public office, schools, national educational institute, or broadcasting station.
4. Those with one year or more of research experience in a foreign college, foreign research institute, or in the educational field.

Table 7

KEDI--Land Holdings
(As of June, 1968)

	Area in Sq. Meters	Year Purchased	Cost of Purchase (in 1000 Won)	1978 Estimated Value
KEDI Main Campus	53,680	1974 - 75	67,500	80,000
Transmission Site (T-Com)	137,650	1973 - 74	147,000	269,000
Training-Housing Center	6,900	1976	44,100	150,000

5. Persons with six months or more experience in broadcasting in a foreign institution.

Persons described as follows are barred from employment with KEDI:

1. Those specifically disqualified by Article 33-1 of the National Public Service Law.
2. Those who have evaded military obligation.
3. Those officially disfranchised of civil rights.
4. Those who are shown to have serious physical deficiencies by examination at a major hospital.

Applicants over the ages designated below are barred from the positions listed:

1. Head researcher and one grade----50 years
2. Senior researcher and two grade position----45 years
3. Researcher and three grade position----40 years
4. Associate researcher four grade and lower position----35 years

Rank category restrictions are:

1. Senior Researchers must hold doctorate
2. Researchers must have B.A. or M.A.
3. Associate Researchers must have Junior College certificate
4. Other personnel restrictions are not defined by educational background

Fringe benefits for KEDI personnel include:

1. A yearly physical examination
2. Sick leave during serious illnesses is arranged on an individual request basis.
3. Scheduled leisure activities take place twice each year.

4. Lunch and work jackets
5. Bus service to and from KEDI
6. A system of meritorious service awards
7. Special interest rate considerations for personnel wishing to construct housing on KEDI land areas.

The salary classifications in KEDI and the currently applicable pay rates are shown in the Appendix. In Research, Engineering, Broadcaster, Librarian, and Administration classification an allowance is added to base salaries at each step. The allowance is permitted by KEDI's semi-autonomous status and applied to an improved competitive position for staff recruitment. KEDI does not automatically benefit from salary increases in civil service pay scales because of its autonomous status. In addition, salaried employees are given an additional month's salary each quarter.

Technician and Maintenance categories have increased numbers of steps on their scales.

KEDI utilized much of the dollar portion of the original loan for overseas training. A listing of persons involved in various kinds of conferences and training programs can be found in the Appendix.

On-site training of staff has taken the form of _ad hoc_ presentations and seminar discussions. In reality the nature of day-to-day work pressures has prevented systematic internal training.

Human Resource Allocation. Specific reference to questions of human resource adequacy for KEDI educational programs is made in other chapters. Table 8 shows numbers of staff by personnel classifications for KEDI generally. Emphasis here is on administrative support staff.

At any given time there are approximately 135 persons employed in support

Table 8

Numbers of Staff by Personnel Classification

	1972	1973	1974	1975	1976	1977	
President/Director	1	1	1	1	1	1	
Auditor (Board Rep.)	1	1	1	1	1	1	
Deputy/Associate Dr./ Vice Pres.	1	1	1	1	1	1	
Head Researcher	-	-	-	-	2	2	
Senior Researcher	3	4	6	6	15	27	
Researcher	16	32	41	54	48	52	
Associate Researcher	-	-	-	-	10	20	
Assistant Researcher	-	-	4	2	10	-	
Intern Researcher	-	15	5	6	2	-	
Research Professor	2	5	11	18	1	-	temporary
Materials Developers	-	-	20	16	-	-	temporary
Technical Staff	3	32	48	46	50	52	1975-22 temporary
Broadcast Staff	-	-	-	27	39	51	1975-4 temporary
Librarian	-	-	-	2	-	3	
Administrative Staff	9	22	28	50	55	53	1975-10 temporary
Skilled Workers	-	-	31	41	37	43	1974-7 temporary; 1975-8 temp.
Auxiliary Staff	-	-	-	6	27	27	temporary
General Services	-	-	11	10	8	10	
	37	114	214	289	307	336	

NOTE: Counts were made late in each calendar year. Totals for 1972-73 are presented as shown in KEDI annual reports. It is not known whether one or more items in those columns are in error.

Table 9

Planning and Coordination Office Staffing

Section and Sub-section	No. of personnel
Planning and coordination	3
Administration and regulation control	2
Auditing and inspection	2
Budget control	2
Information	2
Loans handling	9
Library	5
Total	25

Table 10

Administration Bureau Staffing

Section and Sub-section	No. of personnel
General affairs	6
Personnel affairs	3
Expenditure	3
Property management	4
Maintenance	7
Accounting	8
Publication and printing	8
Emergency planning	7
Automobile driver	15
Guard	4
Sweeper	4
Total	69

categories: secretaries, maintenance people, food service workers, drivers, and custodial personnel. Influential in determining numerical requirements are: KEDI's distance from transportation lines and food services, ROKG regulations relating to national security, and the maintenance requirements of broadcast facilities.

Tables 9 and 10 show current staffing levels by category in the two offices with primary administrative support functions. There will probably be a merging of the two which will cause a total reduction of five positions.

A listing of key KEDI personnel, showing roles, preparation, and experience may be found in the Appendix.

Human Resource Problems and Issues. Human resource administration issues always revolve around two questions: Can the organization compete for the best available talent required by expected product and service outcomes? Can talent be retained in the organization at a high level of productivity? To those questions we add one which is particularly important to professional organizations: Can the organization contribute to the growth of its personnel and, thus, to the improvement of the profession?

In the beginning KEDI was placed in a good competitive position with respect to salaries. Most of the edge has been lost because educational civil servants; teachers and professors; have enjoyed salary increases which were not applied to KEDI. There exists the probability that the ROKG will provide funds for 1979 salaries which will again give KEDI a considerable advantage over other educational employers.* Resources needed by a research and development operation are in short supply and monetary rewards will continue to be of prime consideration in the talent market. The most important competition for

* A new salary schedule approved following the last team visit provides for significant pay increases. The new schedule is shown in the Appendix.

research and development talents comes from the universities and, for technical personnel, from the private sector.

The appeal of the universities is not only monetary. University professors enjoy great prestige in Korea and their time is much less restricted than is the case in leadership and production roles in KEDI. KEDI has clearly been able to attract superbly qualified persons at the higher professional levels, but insofar as it considers itself an academic enterprise, it does not have the appeal of the university.

The retention of qualified staff is, to a fair extent, a product of the same factors applicable to recruitment. In several cases, however, KEDI has provided training opportunities to staff which made them attractive to other organizations. Among those trained (see Appendix) twenty have left KEDI. Ten of those who resigned had received long-term training (five months or more) in foreign countries under KEDI auspices. The remaining ten had been in short term or conference-type programs. Seven of the people lost held doctoral degrees. Losses have been greatest in technical production, as might be expected with the delay in going on the air. However, KEDI has a remarkable record of retaining people, particularly when one considers the uncertainty of its programming status over the past three years. Loyalties are very strong and even those who resign to accept university positions return to serve KEDI at every opportunity as consultants or in other part-time roles.

KEDI has provided a variety of overseas opportunities to its staff: attendance has been sponsored for 16 seminars, 74 training programs (23 of which have been for five months or more), 19 workshops, 17 conferences, and 7 field observations. With the depletion of early training funds, long-term training has dropped off since 1976. KEDI continues to use every possible resource to get staff to programs in other countries and accesses training funds in UNDP, UNESCO, and other international agencies for its purposes.

Internally, there are attempts to hold seminars for research staff on a regular basis. However, day to day work loads are too heavy to permit a systematic program.

All training efforts have been associated with high level research and development roles and with technical broadcasting. There has not been a special effort to advance the competence of persons as administrators nor of those who serve in administrative service positions. Critical areas for future training are those associated with institutional planning, evaluation, and coordination.

If KEDI continues to develop toward research and development roles and away from mass delivery, there will be a tendency to increased self-perception as an academic institution. Professional personnel will then expect treatment as academics. Until KEDI can encourage pursuit of individual professional goals as well as institutional goals its relative desirability as a place for academics will be limited.

If efforts to fund an improved salary schedule are successful, there will need to be a very carefully constructed process for allocation of the new money. If higher salaries are to help KEDI they must result in higher quality human resources who, in turn, must receive increased consideration as professionals.

In the light of the human resource situation discussed above, the following suggestions are offered:

1. In order to develop a responsive capability beyond the ability of KEDI to maintain permanent staff, some strategies to supplement resources could be tried:
    a. Procedures and agreements could be developed for seconding university and other research institute personnel to KEDI to direct major research projects or add particular expertise to programs.

b. MOE personnel and teacher training institution personnel could be directly involved in research and production activities for specified periods of time.

c. A mechanism, such as that used at KDI, could be developed to name KEDI "fellows" or "associates" with clearly defined privileges and responsibilities.

d. Sub-contracting arrangements with other institutes and universities could be explored.

2. In order to keep staff from isolation in sub-units and highly specific and ultimately unrewarding tasks, the following suggestions are made:

   a. A need-for-training plan may be developed in the same way in which budgets are developed--starting in departments and offices and building a KEDI-wide internal training sequence within the money and time constraints.

   b. Exploration of procedures may be made to second KEDI personnel to universities and institutes for research management, teaching, or study activities.

   c. Procedures may be developed which encourage KEDI staff to work as colleagues, on project type work, with staff from MOE or other institutions.

The above points apply to the resolution of questions about recruitment, retention, and professional growth of personnel.

E. Administrative Process Style

In Chapter X is offered A Plan for Self-Assessment at KEDI (Criteria of Success). The plan is intended to provide a general framework for viewing KEDI as an organizational entity and to raise questions for internal response as to KEDI's effectiveness.

In this chapter the concern is with organizational structures and behaviors in an administrative rather than a programmatic sense. In the beginning it was said that "how" questions are strongly influenced by socio-cultural factors. Self-Assessment at KEDI allows KEDI personnel to apply those factors to organizational structure, management, and operations issues. This section discusses the administration of KEDI as observed from a non-Korean perspective. Again, nothing here should be construed as negative criticism, but as a perspective which may serve KEDI leadership as additional input to its deliberations about how KEDI should behave.

General Process Observations. As has been noted previously in this chapter, KEDI behaves very much according to its formal structure. Duties, except at high administrative levels, are rather specifically stated and task-related. Internal relationships are very familial. Filial respect and responsibility goes up the organizational structure and paternal respect and concern go down the structure. All is in the Korean tradition and compatable with behaviors in other observed organizations. Koreans are known the world over as hard working, dedicated, organizationally loyal people. Their sense of national purpose and personal achievement is very high. Such an environment tends toward the following process situations:

1. Decisions affecting the organization are made at managerial levels and input by non-management people is minimal. Internal committees are made up of people with line authority.
2. Policy decisions represent an interplay of political relationship factors and KEDI's best interests as perceived by its leadership. The impact of ROKG-MOE perceptions, as one might expect, is much

more apparent than the impact of the professional education establishment.

3. Communication is hierarchical, and is characterized by instructions going downward and information about tasks moving upward in the organization. That is not to say that leaders do not listen but, beyond those with managerial titles and roles, there is no regularized or recognized channel for input by staff. Individual initiative is not discouraged by leaders but task pressures tends to keep staff from thinking about the total organization.
4. Project coordination follows authority and formal communication lines. Thus coordination takes place at departmental administrative levels rather than at levels at which staff perform related tasks in different structural units.
5. Since many of the tasks are professional and are done by professional teams, staff do have decision realms within task areas. A limitation on those realms exists in the need for standard formats for materials produced.
6. The formality of structure and the degree of concern for specific task performance have created areas of dissatisfaction among professional personnel. Loyalties and personal commitments to KEDI purposes have kept personal-professional dissatisfaction from being an important factor in management to date.
7. Demands by MOE and acceptance of new roles by KEDI have kept the pressure on KEDI's resources in both numerical and qualitative terms.

Thus there has been no breathing space during which KEDI, as a corporate entity, could work out organization-wide planning and evaluation systems.

In general the management styles and process behaviors in KEDI have legitimacy within the environment. The effectiveness of leadership cannot be questioned. KEDI has grown on every dimension and its importance is generally recognized in spite of the serious set-backs suffered because of technological malfunctions. KEDI's administrators are professionally dedicated, politically wise, humane persons. They seek to change and improve KEDI as they seek to change Korean education. They are receptive to ideas and non-defensive in the face of criticism.

As the organization matures and settles into its roles, one can expect some changes which may help create pressure for new management emphases:

1. Since KEDI staff will hold essentially professional-academic perceptions of themselves and work, an internal culture may develop which creates a less familial style, less formality of structure, and an enlarged decision input. (This is particularly true because of the number of foreign trained staff).
2. To the extent that professional staff roles are task specific, monitored by format, and/or close supervision, and tied to production, KEDI must deliberately plan to provide the time and resources for personnel to pursue personal-professional ends.
3. Planning and evaluation skills and techniques, to date primarily applied to the E-M Project, will need to be extended to organizational planning and evaluation in a systematic fashion. Included in evaluation considerations should be analyses of satisfaction of staff.

4. Current KEDI leaders are more nearly indispensable than should be the case in an organization expected to function over time. The preparation of new leadership should be as much a preoccupation in KEDI as the continued preparation of research staff.

KEDI operates and is managed in a unique environment. That it is a stable, effective organization is due to a complex of factors among which is the competency of its management. Attempts to use the KEDI model in other settings must take into account the issues raised in this chapter and must make appropriate modifications. Korea cannot be replicated exactly anywhere else; nor should KEDI's management styles and process behaviors.

CHAPTER V

THE ELEMENTARY-MIDDLE SCHOOL DEVELOPMENT PROJECT

A. The Origin Of The E-M Project

Background for Reform. The elementary and middle school programs that existed in Korea in the late 60's and early 70's had been established following the conclusion of the Korean conflict. These programs, including curriculum, textbooks, facilities, school organization, and administrative structure that began with the original plan in 1958, had been modified over time but the resulting modifications had not sufficiently altered the educational system to keep abreast of the changing needs and the development of new knowledge in the fields of learning and instruction. During the late 60's educational leaders, scholars, teachers, school administrators, and parents were expressing dissatisfaction with the existing system. There was a concern for the increasing numbers of elementary school children and a related concern about expanding the possibilities for a larger percentage of students to attend the middle school. There were concerns about the low level of achievement attained by students then going through the schools as well as wide variations in the achievement of students from rural communities and students from urban communities. Both of these concerns seemed to relate specifically to the more general concern of the quality of instruction taking place within the schools. There were concerns about lack of continuity between the elementary and middle schools, the overcrowded classrooms, the labor intensity of the educational process, and the efficiency of the then process relative to the investments.

Past efforts for improving the educational system had attempted to attack specific problems within the system without considering the complexity of educational problems and their effect on each other. Efforts had been made to revise curriculum, to introduce audio-visual assistance to instruction, to implement newer trends in the teaching of science and mathematics, to upgrade in-service teacher education, and to revise and modify the systems for national and local entrance examinations. At the same time there was a press by the government to increase the percentage of students attending school and to provide equal opportunity for all. Given the limitations of available funds for education there were never sufficient funds to meet both the quantitative and the qualitative needs of Korean education.

Proposals for Change. Around 1968, through the initiative of a group of influential and competent scholars, an educational planning committee was formed to develop a Comprehensive and Long-Range Educational Plan (CLEP). It was this plan that called for the establishment of a new institute charged with the responsibility of developing and implementing innovations in curriculum and instruction. The interest of this committee in changing the total structure and programs of the schools eventually led to an agreement between USAID, the Government, and Florida State University as described in Chapter III. Through this FSU was commissioned to study education in Korea and to make recommendations as to how the Republic of Korea "might be able to organize its educational resources in ways that would make its educational programs responsive to the nation's needs and, simultaneously, function more efficiently than its present educational system". Although the completed study of FSU included analyses and recommendations for Korean education beyond the elementary and middle school, it is only this portion of the report that is relevant here. Morgan and Chadwick in the first chapter recommend that "the highest priorities for extraordinary change and development for Korea for the next five years should be at the elementary-middle school level. It is believed that through a substantial, but feasible, effort in the development and validation of a significantly different kind of elementary-middle school that Korea can provide an educational program of demonstrably higher quality and relevance for all age-eligible Korean youngsters".

The proposed elementary-middle school program was to include several components in order to reach the desired ends. These are: (1) the organization of students into "instructional units" of 300 students, (2) each unit to be instructed by a four member teaching team with differentiated staffing, (3) each unit be assigned to six conventional classrooms, (4) double shifts be used to provide for the needed space, (5) self-study materials be used so students can study out of school as well as in school with less teacher immediate instruction needed, (6) a system of individualized instruction be developed, (7) the basic instructional resource for individualization be a "student-learning unit" prepared in modular form, (8) the creation of a national educational radio and television distribution system, (9) the creation of a national organization, (Korean Education Development Laboratory) to research, develop and demonstrate the new system, and (10) Korean educators and scholars be responsible for suggesting needed changes in the curriculum to meet national needs and to provide for inclusion of higher mental thought processes such as inquiry and problem solving. In addition to these proposed considerations the report also suggested that a systems approach to the design, development, and demonstration be utilized and that continuous progress of each student be permitted.

Of the predictions that the FSU report included, two should be mentioned here since they are relevant to the final outcome. The first of these was "It is predicted that this program (the Elementary-Middle School proposed program), once developed and installed in the nation's schools, will not only be cost effective, it will in fact cost less per student to operate than is presently the case". The second was "All the graduates will be as well prepared academically as today's high school graduate in Korea".

The FSU Report and the discussions and controversy which it generated are described in some detail in Chapter III. The eventual outcome was a series of recommendations concerning the establishment and operation of a new national educational research and development institute which would be assigned the task for major educational reform at the elementary and middle school levels and which also would be given a broad and comprehensive role in the educational development of Korea.

B. The Elementary-Middle School Development Project

In November of 1971 the Ministry of Education gave authorization to Dr. Yung Dug Lee to develop a plan for the Elementary-Middle School Development Project. The specific purposes of the project were contained in a proposal to USAID for assistance and support. The following excerpt from the proposal clearly states the basic purposes underlying the anticipated establishment of KEDI and the undertaking of the educational reform effort.

> *In the past quarter century, Korean people have developed the institutional foundation of democratic education and a gigantic national school system. In spite of the fact that Korean people have strong aspirations for education of their children, and the government has invested a huge amount of financial resources in education, Korean education today is faced with a variety of formidable problems. It is the historic time for the Korean people to exert an intensive effort for the qualitative improvement of education. If no fundamental change occurs in the educational system in the near future, the prospective trend of school population expansion will pose a serious threat of a continuously*

increasing educational expenditure beyond the ceiling point of the nation's economic capability. In this respect, low standards of teaching and student learning will not be improved without changing the current system. The rapid expansion of the student population has resulted in an increased demand for teachers which, in turn, has severely constrained the professional quality and preparation of teachers. In the present system, it can be hardly expected that a teacher, who has a large group of students, could, alone, significantly raise the effectiveness of education. Unfortunately, the educative potential of the educational system is too weak to realize the educational ideals expressed in the Charter of National Education. The regional gap in the opportunity and quality of education is getting wider, and perhaps is the source of the social and economic inequality which exists between regions.

In this context, the Korean elementary and middle school education is confronted with the following tasks, the accomplishment of which represent the purposes of the present project:

A. The determination of educational ideals and objectives reflecting the cultural heritage, social reality, and future direction of the Korean society.

B. The reformulation and systematization of educational content to correspond with the established educational objectives.

C. *The development and utilization of modern educational methods, facilities, and materials to achieve an effective and economically efficient program of education.*

D. *The establishment of a comprehensive research and development agency to assist the Ministry of Education in formulating educational policy for the nation.*

C. Project Tasks and Goals

Major Project Tasks. The funded proposal describes the major project tasks to be undertaken within the framework of the E-M Project. These tasks, eight in number, are summarized in the paragraphs that follow.

1. Development and Clarification of Educational Goals. As the first major task this was to include: (1) the development and clarification of national ideals and needs, (2) derivation of educational implications from these ideals and needs, and (3) the formulation of educational objectives based on those implications. This work was envisioned as a long term task to continue "throughout the duration of this project".
2. Curriculum Development. Based on the results of the first task a new curriculum is to evolve. This new curriculum will (1) reflect the national ideals and needs, (2) provide for the balanced development of children in terms of their cognitive, moral, and affective requirements, and (3) reflect modern knowledge and technology.
3. Development and Production of Textbooks and Other Learning Materials. In order to implement the new curricula into the schools, textbooks and other instructional materials will be developed. The textbooks for each subject area are to be developed in close cooperation with the Ministry of Education. In addition to the textbooks other instructional materials will be developed to: (1) supplement the textbook, (2) enrich the learning opportunities in order to accommodate individual differences, (3) provide for diagnosis of children's learning needs, and (4) include modern instructional media as a learning resource to the education system.

All of the instructional materials are to be designated and developed to apply the most current learning theories and instructional technologies.

In addition to the children's materials supplementary instructional materials to assist the classroom teacher will be developed. These materials are to enable the teachers to perform effectively the varied instructional tasks required under the new system.

4. Research and Implementation of Teacher Education Programs. This task "will include studies on the basic goals, content, and methodology of teacher education programs to insure successful implementation of the new instructional system as well as for long range development of Korean education".

   The following are major activities to be included in this task: (1) research on improvement of pre-service teacher education, (2) research on improvement of in-service education, and (3) training teachers for the implementation of the E-M Project.

5. Design and Demonstration of the Instruction and School Management System. "The fifth task in this project is to reform the existing instructional and school management systems in such a way as will provide a more effective and efficient operation within the context of Korean educational realities". The new educational system is to be designed to remedy "the dehumanizing effect of educational methods which are inherent in excessively crowded classrooms". However, attempting to substantially decrease class size while maintaining the conventional pattern of instructional organization is not a realistic solution when Korea's financial situation and continued population growth are considered.

For this reason, a flexible organization of instructional units and differentiated staffing are viewed as more realistic alternatives.

6. Development and Operation of Educational Television System. The disparity between educational ideals and practices and the performance level of the present educational system of Korea is largely due to the under-development and under-utilization of communication media in Korean education. The educational television system, designed as a part of the total educational system, will greatly improve Korea's educational system.
   This system is to include: (1) the originating facilities (2) the transmitting facilities and (3) the school reception facilities.
   In addition to the integral support of the student's program for the E-M Project the ETV system will also be used for in-service teacher training, vocational education for youth out of school, pre-school education, and other needs as they emerge.
7. Research and Development for Expansion of Social Education System. School education is not only influenced by the internal conditions of the school but also by the physical and psychological environmental conditions of the community in which the school is located. The E-M Project will include programs for the expansion and improvement of the social education system.
8. Comprehensive Research and Development of Educational Policies. Since the research and development tasks of the project are viewed as reflecting Korean realities and conditions, the E-M Project is conceived as an integral part of the nation's long-range educational development.

> "In this sense, this comprehensive research and development project will establish a viable foundation for the further development of national education policies." Included in this task of research and development are: (1) research and development for the utilization of educational ideals and for the continuous improvement of educational content and methods, (2) recruiting and training of research and development personnel, and (3) basic and applied research on major educational problems.

In addition to the goals implicit in this major tasks, there are three additional goals of the Korean Educational System which were stated as aims in the USAID Loan Proposal. These goals are:

1. To provide each individual with the competence needed to pursue a satisfying life-time occupation.
2. To establish the social interactive skills, values, and attitudes which comprise "good citizenship".
3. To make possible progressive individual development for the enjoyment of esthetic pursuits.

E-M Project Goals. Based upon the task as outlined in the USAID proposal of 1972, KEDI began the work of clarifying goals and objectives for the E-M Project; examining expectations; recruiting, hiring, and training of staff; and developing a more complete developmental design and accompanying work schedule.

The overriding goals and objectives of the E-M Project were drawn from the original need to establish the project and are reflected in the proposed tasks of KEDI. These are:

1. To develop new curricula that better reflect (a) Korean national ideals and needs, (b) a balance in terms of cognitive, moral and

affective learning outcomes, and (c) modern knowledge and technological development and applications.

2. To raise the current achievement level of all children.
3. To raise the achievement level of children in the higher learning thought processes (as reflected in Bloom's taxoncmy).
4. To reduce the regional gaps in achievement by equalizing the educational opportunities of both urban and rural children.
5. To provide educational opportunities for more children, especially in the middle school years.
6. To improve the cost effectiveness of the educational system.
7. To improve the accountability and credibility of the educational system to the general public in order to obtain more support for the new educational system.

These goals have become the "output goals" of the E-M Project and are, then, still the bases for the instructional design and evaluation of the project.

D. Implementation Plan For The E-M Project

USAID Plan for Implementation. The original USAID Loan Proposal also carried a plan for organizing and implementing the project. This plan consisted of the following components:

1. Analysis and evaluation of current curricula and instructional practices
2. Design and development of new curricula and instructional system
3. Development and construction of adequate measurement devices
4. Development of instructional programs, materials, and aids
5. Validation of learning programs and new instructional system

6. Training for teachers, administrators, research and development personnel
7. Development and installation of ITV system
8. Production of developed ITV and other programmed materials and aids
9. Public relations work and preparation for the nationwide implementation

It was the intent of the plan to focus on "a total reconceptualization and restructuring of the existing system, not a series of patchwork and discontinuous activities". As stated in the USAID proposal "It is generally recognized that the present Korean educational system, especially at its elementary and middle school levels, is characterized by an inefficient instructional process, an outdated school curriculum with an overriding emphasis being placed on rote memorization of classically academic subjects, and generally a very low cost-return ratio in terms of its contribution to manpower development".

The plan for change is to emphasize four major areas of differences from the conventional school in the present system.

1. A different curriculum which emphasizes educational goals more relevant to both the national and individual needs.
2. A different method of grouping students and administratively organizing the school.
3. Different range and mix of instructional resources including the ways in which these resources will be delivered to the student.
4. Different patterns of instructional staffing.

Components of the KEDI Plan for Project Implementation. Given, then, that the overriding goal of the E-M Project is to develop, test, revise and implement a relevant, modern educational system for the elementary and middle schools of Korea, the general plan to accomplish this set of tasks has eight components. These components, identified by Dr. Shin Se Ho as major tasks, are:

1. Conduct studies on educational goals
2. Develop curriculum specifications
3. Develop new instructional and learning materials
4. Develop and demonstrate instructional and school management systems
5. Develop and operate educational Television and Radio systems
6. Develop and implement teacher training programs
7. Conduct policy studies and diffusion activities
8. Evaluate new education system

E. Educational Goals of the E-M Project

Whereas the E-M Project goals, as stated earlier, serve as a guide for the E-M Project, the educational goals of the E-M Project serve as a guide for identifying the kind of educational system to be implemented. The KEDI staff and administration, in developing and specifying the educational goals, have drawn upon the expertise of many Korean educators from a number of Korean colleges and universities as well as several U.S. educators including Benjamin Bloom and Robert Gagné.

The educational goals of the E-M Project are an attempt to identify and translate into an educational system the values of the Korean society that reflect the support for the schools. These goal statements reflect, then, what should be learned, when it should be learned, and how learning will take place. Several of these goal statements overlap the general goals of the

E-M Project and will be repeated here for clarity. The goals are:

1. A major emphasis in the curriculum should include the development of higher mental thought processes such as: problem solving, inquiry skills, and creative thinking.
2. The development of moral and affective characteristics such as attitudes, beliefs, values, and interests should receive a balanced emphasis in both the manifest and latent curricula of the schools.
3. In the light of the current and future needs of the nation, such characteristics as national identity, social responsibility and self-reliance should also be fostered along with the basic concepts and principles fundamental to occupational preparation.
4. The educational system should provide students the opportunity to engage in the learning process through active involvement.
5. The educational system should enable the students to play a major role in managing and conducting their own studies.
6. The educational system provides an opportunity for students to make regular progress toward the mastery of instructional objectives.
7. The educational system will enable students to work with learning materials and procedures adapted to individual differences in ability, speed of learning, and learning style.
8. The educational system will be as realistic and as relevant as possible in terms of the Korean nation's economic and cultural reality and needs.

In addition to these general educational goals of the new system there are several specific goals or objectives that should be noted at this time. These sub-goals also serve as specific guides to the developers in planning particular aspects of instruction. They are:

1. To develop a system of instruction that reduces the reliance for delivering instruction on the individual classroom teacher as the exclusive presenter of instruction.
2. To develop a system that will provide approximately one third of the instruction for each student through educational radio and television.
3. To develop a system of instruction that will permit students to spend 35%-40% of their time in self-directed learning.
4. To develop student learning units that will include (a) a detailed statement of the instructional objectives covered by the unit, (b) necessary checking and testing devices built into it, (c) basic programmed and other instructional materials, (d) summative tests where appropriate and (e) directions to other appropriate and readily available instructional materials not included in the unit. These student learning units will be packaged in a durable manner to permit their repeated use for three to four years.

F. The Development of the E-M Project

Curriculum Planning. The curriculum for the elementary schools is divided into nine content areas: moral education, Korean language, mathematics, science, social studies, music, fine arts, practical arts, and physical education. The curriculum for the middle school consists of these same nine content areas plus national history and English. One of the first tasks of KEDI was to examine the current curriculum goals for each of these areas and to develop the specific objectives for each grade level for each curriculum.

To accomplish this, nine teams were established within the E-M Project with each team being composed of a subject matter scholar (usually a part time research associate with an academic appointment at one of the colleges or universities), a senior researcher (usually a content specialist with 8-10 years of teaching and possessing some management skills), and several content writers (again persons with some teaching and an interest in development). These teams with the assistance of a few scholars employed as consultants analyzed each of the curricula and the textbooks approved by the Ministry of Education to be used during the 1973 and 1974 academic years. As a result of this analysis, course syllabi and list of curriculum objectives for each content area by grade level have been identified for incorporation into later revisions. The course syllabi and the ordering of objectives for each course, for each grade, follow the nationally approved textbook as a guide.

In preparing for the initial revision of all curricula for the elementary and middle schools KEDI carefully considered the many alternative approaches to such a revision. Having considered the alternatives, KEDI conscientiously attempted to follow a revision plan that could be realistically managed, could receive widespread acceptance from college and university scholars, could be understood and accepted by teachers, and could include as many of the desired goals as possible. For this KEDI is to be commended. In this report, Benjamin S. Bloom stated:

> *Many of the curriculum centers I have visited throughout the world have been less than fully successful in these relations. They have encountered very difficult problems of acceptance of otherwise excellent new curricula by teachers, schools, and leading members of the society. I dwell on this*

> *because KEDI must do everything possible to maintain these excellent relations if the new development are to become an integral part of the learning processes in the classrooms of Korea.*

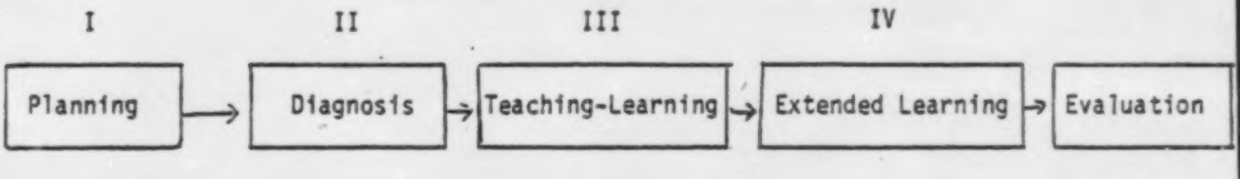
KEDI has attempted to follow this advice and, if it is to be successful, must continue to strengthen these relationships.

New Instructional System and Learning Materials. In order to develop appropriate materials to meet the needs of children and teachers, KEDI has implemented a General Instructional System Model similar to other instructional systems models fround throughout the world. The KEDI model, which is designed "to take into consideration the academic progress of individual students but does not overload the teacher with management problems", has five stages: (1) planning, (2) diagnosis, (3) teaching-learning, (4) extended learning and (5) evaluation.

The schematic plan for this model is presented in Figure 1.

Figure 1

Schematic Plan for E-M Instructional Model



Planning. The planning stage of the instructional system consists of three tasks: task analysis, lesson plan, and management plan. See Figure 2.

Figure 2

Planning

Task Analysis	*Lesson Plan*	*Management Plan*
1. Identification of Terminal Objectives	*1. Student Learning Activities*	*1. Time Schedule*
2. Identification of Subordinate Objectives	*2. Teacher Activities*	*2. Utilization of Classrooms*
3. Identification of Structure of Learning Tasks	*3. Instructional Sequence*	*3. Utilization of Personnel*
	4. Instructional Media	*4. Utilization of Instructional Media & Materials*
	5. Evaluation Plan	*5. Provisions for Latent Curriculum*
	6. Latent Curriculum	

Each KEDI curriculum team is responsible for the identification, wording, and ordering of the instructional objectives for each grade level and for units within the grade level. These objectives are then organized into instructional units requiring approximately eight to sixteen lesson hours of instruction. As much as possible, these units are to parallel the structure of the textbooks currently in use.

Once the objectives have been stated and ordered the KEDI curriculum teams then develop suggested lesson plans for teachers. These plans contain student learning activities, teacher activities, instructional sequences, instructional media, evaluation plans, and latent curriculum aspects. The attempt here is to provide the teachers with as many and as meaningful suggestions as possible so that the teacher will have the necessary information to implement the units and, when necessary, to be able to adapt the instruction to particular school or individual student needs.

The third element of the planning stage is the management plan. Here, KEDI provides the teachers with (1) suggested time schedules, (2) classroom activity suggestions, (3) personnel utilization suggestions to carry out these activities, (4) materials and instructional media needed, and (5) management suggestions to provide for latent curriculum needs.

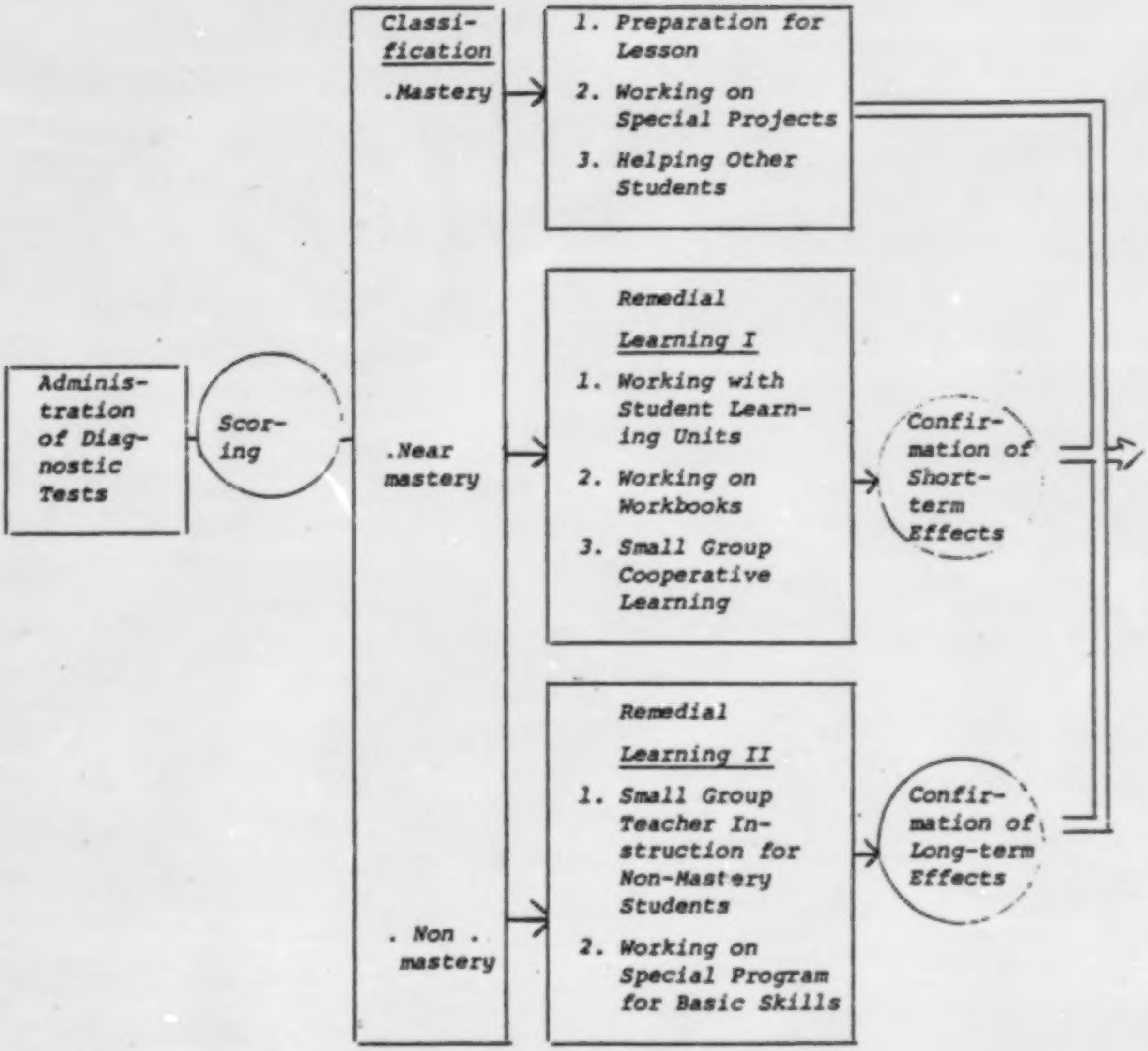
All of the materials developed by the KEDI staff relative to the planning stage are compiled into Teacher Guides organized by unit and grade level. The Teacher Guides include detailed lesson plans for each hour of instruction with the expectation that the teachers will modify these plans to adapt to their own instructional-learning setting.

Diagnostic Stage. The purpose of the diagnostic stage (Figure 3) is to identify the student's level of understanding of the prerequisite needed for the unit to be studied. The prerequisite behaviors, the tests, and suggested learning activities for students needing remedial instruction are developed by the KEDI staff and provided for teachers in the Teacher Guide. One unique feature of the KEDI instructional system is the classification of students as a result of the diagnostic tests.

According to the scores, each student is classified as either having mastery, near-mastery, or non-mastery. For each of these groups teachers are provided with suggested activities appropriate to the group's needs. This procedure of grouping to meet individual needs has been adapted by KEDI as a

Figure 3

Diagnosis

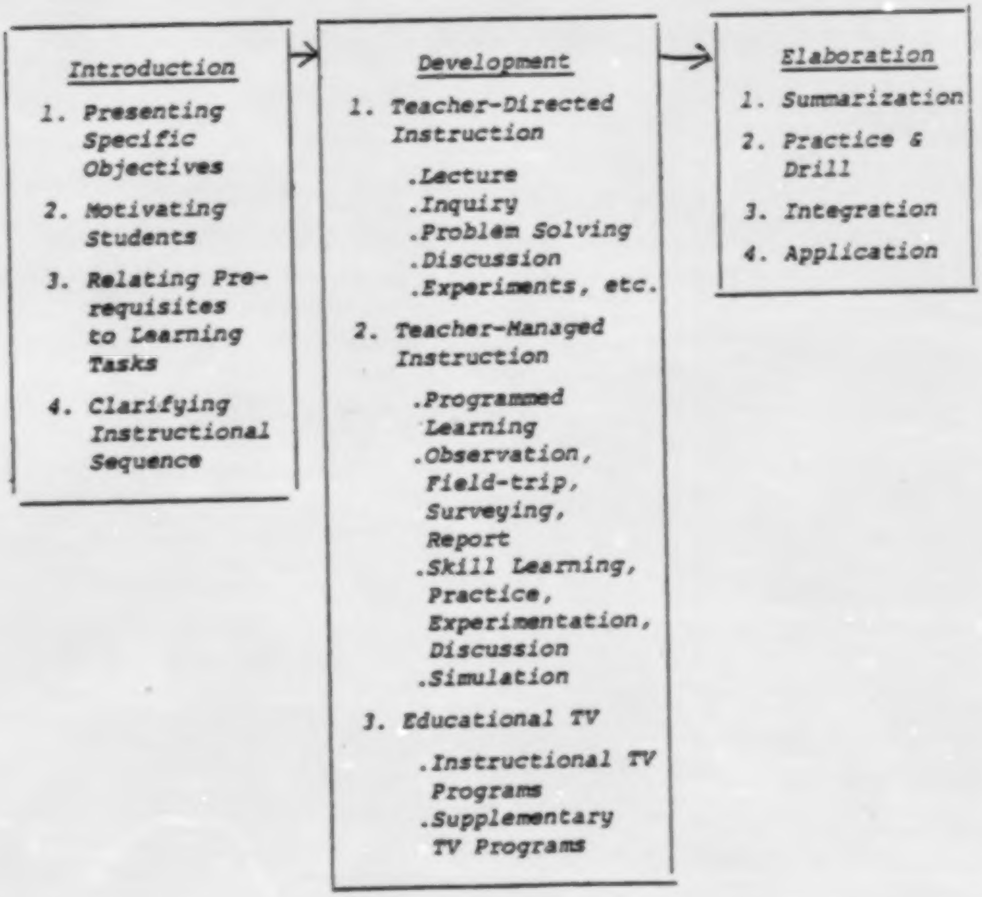

Adminis-tration of Diag-nostic Tests
Scor-ing
Classi-fication
.Mastery
.Near mastery
. Non . mastery
1. Preparation for Lesson
2. Working on Special Projects
3. Helping Other Students
Remedial Learning I
1. Working with Student Learn-ing Units
2. Working on Workbooks
3. Small Group Cooperative Learning
Remedial Learning II
1. Small Group Teacher In-struction for Non-Mastery Students
2. Working on Special Program for Basic Skills
Confir-mation of Short-term Effects
Confir-mation of Long-term Effects

compromise plan, in an attempt to provide a practical solution to student needs, instructional costs, and realities of what is possible with current student-teacher ratios.

Teaching-Learning Stage. The third stage of the instructional model is the teaching-learning stage (Figure 4). The activities developed for this

Figure 4

Teaching-Learning


Introduction
1. Presenting Specific Objectives
2. Motivating Students
3. Relating Pre-requisites to Learning Tasks
4. Clarifying Instructional Sequence
Development
1. Teacher-Directed Instruction
.Lecture
.Inquiry
.Problem Solving
.Discussion
.Experiments, etc.
2. Teacher-Managed Instruction
.Programmed Learning
.Observation, Field-trip, Surveying, Report
.Skill Learning, Practice, Experimentation, Discussion
.Simulation
3. Educational TV
.Instructional TV Programs
.Supplementary TV Programs
Elaboration
1. Summarization
2. Practice & Drill
3. Integration
4. Application

stage provide for large group, small group, and individual instruction. Large group, or whole class instruction, is provided through teacher directed activities and through ITV and radio programs. It was originally the plan to provide either ITV or radio instruction for every unit with each student receiving 1 to 2 instructional hours per day through these media.* This plan has not been implemented because of technical problems associated with the television delivery system.

The teacher directed activities consist of lectures, problem solving, inquiry experiences, discussions, experiments, and others. In addition, through small group and individual instruction, the teachers manage the programmed instruction activities, student observation experiences, field trips, surveying, report writing, simulation, and others. To assist the teacher and the student, KEDI has developed student workbooks or guide books supplementing and/or complementing the textbooks, organized by units into the three learning steps of: introduction, development, and elaboration. The design and development of these workbooks has been a major task of the KEDI staff and to assist in this development KEDI has contracted with nine Provincial Research and Development Centers, one for each of the content areas. Each of the centers has sent personnel to be trained by the KEDI curriculum staffs and all are now involved in developing student learning activities for many of the units for the second, fourth, and sixth grades. It is anticipated that these same centers will later function as diffusion centers for the large scale implementation activities of the project.

Extended Learning Stage. After the students have completed the activities specified in the teaching-learning stage a "formative test" is administered to determine degree of progress (Figure 5). Depending upon the results of this test each student is identified as either having mastery, near-mastery, or

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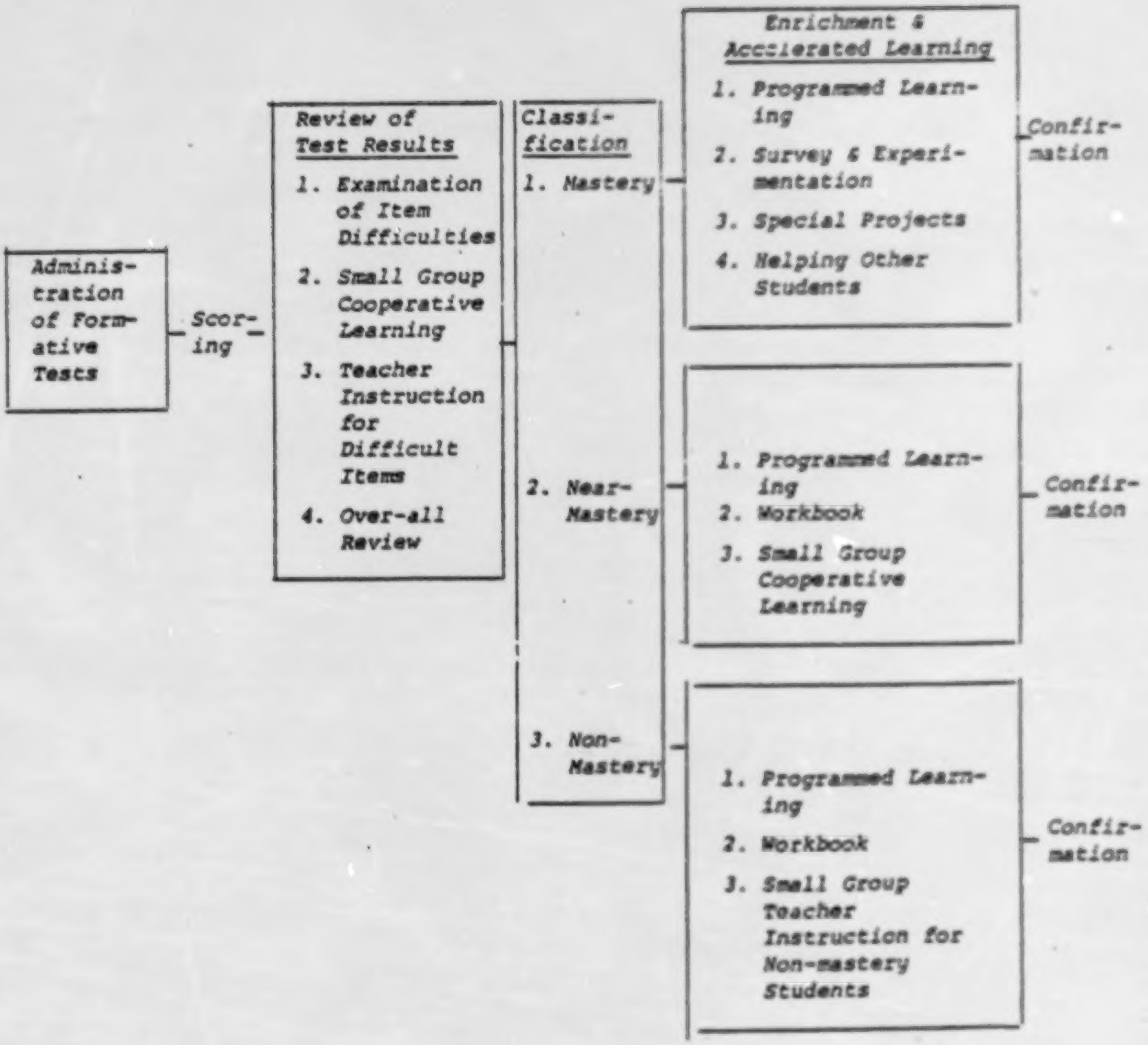
*A more detailed discussion of ITV and IR is provided in Chapter VII of this report.

Figure 5

Extended Learning


Adminis-
tration
of Form-
ative
Tests
Scor-
ing
Review of
Test Results
1. Examination of Item Difficulties
2. Small Group Cooperative Learning
3. Teacher Instruction for Difficult Items
4. Over-all Review
Classi-
fication
1. Mastery
2. Near-Mastery
3. Non-Mastery
Enrichment &
Accelerated Learning
1. Programmed Learning
2. Survey & Experimentation
3. Special Projects
4. Helping Other Students
Confir-
mation
1. Programmed Learning
2. Workbook
3. Small Group Cooperative Learning
Confir-
mation
1. Programmed Learning
2. Workbook
3. Small Group Teacher Instruction for Non-mastery Students
Confir-
mation

non-mastery of the content. Those students classified as "mastery" are provided enrichment and accelerated learning activities such as programmed instruction, surveys, experiments, or special projects. In some instances it is also suggested that these students serve as tutors or helpers for other near-mastery or non-mastery students. Most of the activities for this group require independent study or small group activities requiring little if any, instruction and supervision by the teacher.

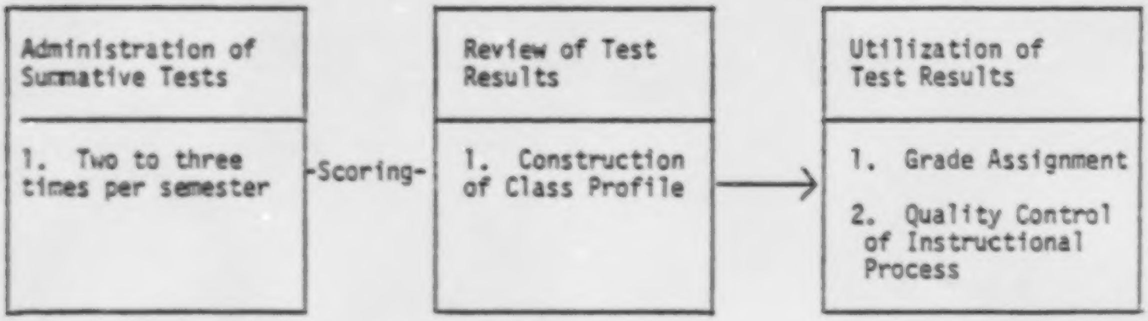
Students classified as "near-mastery" as a result of the formative tests are also provided learning activities that require a maximum of student involvement with a minimum of teacher directed instruction. The activities for this group include programmed instruction materials, workbook activities, and small group cooperative learning.

The group classified as "non-mastery" is the group designated to receive the most attention of the teacher in this stage. Although programmed materials and/or work book materials are to be available to these students the teacher is encouraged to work directly with these students regardless of the activities assigned. It is for this purpose that the management system and the corresponding learning materials of KEDI have been designed.

Evaluation Stage. The last stage of the instructional model is the evaluation stage (Figure 6). In this stage the "summative tests" or end of unit or set of units tests are administered. These tests are to provide information to the student, teacher, and parent as to the degree of mastery of the specified cognitive, affective, and/or psychomotor objectives. Although KEDI provides the teachers with tests and test items the teacher can develop their own tests for this purpose. It is also the intent of KEDI to attempt to assess the unintended educational effects of the instructional system with the summative tests. To assess this aspect data will be collected relative to such factors as latent curriculum and student adjustment.

Figure 6

Evaluation


Administration of Summative Tests
1. Two to three times per semester
-Scoring-
Review of Test Results
1. Construction of Class Profile
Utilization of Test Results
1. Grade Assignment
2. Quality Control of Instructional Process

Function:

1. Evaluation of Achievement on Major Instructional Objectives
    . Cognitive Domain
    . Affective Domain
    . Psychomotor Domain
2. Evaluation of Unintended Educational Effects
    . Latent Curriculum
    . Student Adjustment

Specific Instructional Models. (By content areas) Based on the General Instructional System Model, KEDI has developed nine specific instructional models which prescribe the teaching-learning strategies for each of the content areas. These nine sub-models differ as to format.

School Management System. Because the new instructional system requires a variety of instructional procedures, within a particular classroom and, in the case of ITV, across several classrooms, it has been necessary for KEDI to design a school management system to facilitate these changes. In the initial planning stages of the E-M Project one goal of the project was to develop a coordinated management system with instructional strategies that could reduce the instructional class size through differentiated staffing. It was originally proposed that the students be divided into instructional units of approximately 300 and that the management of this instructional unit become the responsibility of a four person teaching team. Each team would consist of a master teacher and three teaching assistants with the total cost of the team being the same as or less than the current teaching personnel costs for 300 students. However, as a result of the third small scale tryout in which teacher aides were used in the instructional process this portion of the management was eliminated and KEDI turned its attention to improving the school and classroom management procedures that were supposed to be operating in the schools under the existing structure.

The management plan developed drew upon the literature in the field of management adopting many of the procedures described by the systems known as "Management by Objectives" (MBO). The general model for the management system devised by KEDI has three basic components: planning, implementation, and evaluation of school management. The planning stage requires the school administrator with the staff to establish the school goals and objectives, to set priorities on these objectives, to specify how and when they will be carried out, to determine the sub-system management plan (grade level or combination of grade levels) and to specify how each objective should be evaluated. For the implementation stage KEDI has developed a wide variety of forms with supporting documents describing the purpose of each and how each should be used. These forms include those for the principal, the team leader at each grade level, and the individual teacher of the school.

The evaluation stage depends heavily on the thoroughness of the planning stage and the degree of cooperation attained in completing the necessary forms and reporting events as they happen during the implementation stage. Materials describing the evaluation process are available for the schools and, in addition, key personnel are provided training in the process and procedures of evaluating the management system.

G. Research and Development Activities of the E-M Project

In order to prepare for and carry out the massive planned change for educational reform, KEDI has had to become involved in a wide variety of research and development activities. Beginning with the early planning stages for the preparation of the USAID proposal researchers had to analyze the current state of affairs and propose tentative possible solutions to the existing problems. Once KEDI was established as an educational research and development institute these activities became primary. Since 1972, KEDI has been involved in a number of research and development activities, some relating specifically to the E-M Project, some relating indirectly but closely to E-M, and some relating generally to education but not to the E-M Project. The research and development activities to be discussed here are those that relate closely to the E-M Project. Other research and development activities of KEDI are described elsewhere in this report.

Studies of Educational Goals and the Curriculum. From the beginning, KEDI has had to develop statements of the education goals for Korean education and specifically for the primary and middle schools. Researchers oriented in philosophy, history, psychology and sociology of education have been engaged to participate in this activity. One particular outcome of note is the report Explorations in the Goals of Korean Education (1972). This report is a summary of the outcomes of a seminar sponsored by KEDI in which 150 scholars representing various aspects of Korean life participated. KEDI has continued this research into education goals for Korea, and several additional reports have resulted.

Closely related to studies of goals have been a variety of studies identifying and specifying the objectives of the existing school curriculum. As one of the early tasks in preparation for the E-M Project KEDI researchers, with assistance from subject matter scholars from the universities, carefully and systematically specified the curriculum objectives for each of the subject areas in the primary and middle schools. As a result of this effort, KEDI was able to verify what most educators had been stating: that the existing curriculum lacked systematic organization, was too dependent upon lower level thought processes, and was not coordinated across subject areas. Although KEDI was restricted by having to use the existing textbooks, KEDI was able to modify the use of these textbooks through KEDI produced student workbooks and teacher guides.

As a result of these studies, fourteen reports on the curriculum specification were completed for subject areas in the elementary and middle school. Each of the reports includes the following:

1. Tables of content structure, behavior classification, and instructional tasks.
2. Table of curriculum needs for each subject area.
3. Task analysis and teaching-learning plan for each unit in each subject.
4. Listing of standard teacher guides and workbooks.
5. Analysis of the texts.

Studies of Current Educational Strategies. In preparing for the development of the new educational program for the primary and middle schools, the staff of

KEDI, with assistance from university faculty and teacher trainers, analyzed the current instructional strategies as well as the material being used. The outcome of these studies indicated that the quality of instruction was generally low,and this was attributed to the lack of structure in the curriculum, the reflection of this lack of structure in the instructional materials, the numbers of minimally qualified teachers,and the inadequacy of the in-service programs. The E-M Project, therefore, was structured to deal with these shortcomings as much as possible. KEDI could not discard and replace the existing textbooks. It could not reassign teachers. It could not change the faculties, the school schedule, the classroom assignments of students or, in the early stages, the testing practices of the local and provincial school districts. Thus, KEDI was expected to develop a program to drastically modify the educational system but to do so with many significant constraints that were identified as a part of the problem.

The research and development activities, therefore, were concentrated around the development of a system that could more or less fit within the existing structure and new instructional materials that could offset some of the weakness identified in the curriculum and in the textbooks. The system and the KEDI materials were systematically tested through a series of small scale tryouts and then comprehensive tryouts beginning in June, 1973 and ending in February, 1979. These tryouts have resulted in the development of instructional materials, evaluation instruments, teacher training materials, and implementation manuals for eventual use in the dissemination of the E-M Project.

Instructional Materials

Student Workbooks. Student Workbooks have been developed for the subject areas of Korean language, social studies, mathematics, and science for grades 2 through 6. These books contain exercise materials, self-learning exercises, and reference materials with approximately one page of exercises for each hour of instruction. (This, of course, varies from subject to subject and grade to grade). Each book follows the same format, adhering to the KEDI instruction plan of Planning, Diagnosis, Teaching-Learning, Extended Learning, and Evaluation.

Teacher Guides. Teacher Guides have been developed for all subject areas of the elementary school curriculum for grades 2 through 6. Each Teacher Guide includes lesson plans for the entire semester, unit lesson plans, and an evaluation plan. The Teacher Guides are keyed to the Student Workbooks and the 1973 edition of the elementary school textbooks. The second grade Teacher Guides only contain a copy of the pages from the Student Workbook.

Television Programs. Although a limited number of the television programs have actually been tested in the system and few are in use at this time, over 1,500 have been developed. These programs would have to be classified as supplementary in nature since the E-M educational system has been modified over time to eliminate the instructional dependency on these programs. These television programs are approximately 15 minutes in length and are in color.

Radio Programs. Approximately 4,400 radio programs have been developed for instructional use in the E-M Project. These programs, averaging about 15 minutes in length, are supplementary to the classroom instructional materials. Approximately 2,000 such programs are broadcast each year.

Evaluation Instruments. KEDI has developed a variety of evaluation instruments, some for purposes of teacher use in evaluating pupil progress and some for system formative and summative evaluations. Diagnostic, formative, and summative tests used by teachers to assess pupil progress have been developed for each subject area where appropriate with the diagnostic and formative tests being included in the student workbook while the unit summative tests are produced as separate test instruments. To assist in the evaluation of the E-M program, KEDI has developed: (1) a Test of Basic Skills that measures language, reading, mathematics, and study skills, (2) an achievement test to measure pupil achievement at the end of each grade level, (3) attitude tests to measure pupil, teacher, and parent attitudes toward the new system, (4) a test of study habits to evaluate student habits, and (5) survey instruments, questionnaires, developed to obtain information about educational expenditures, school environments, educational opportunity (number of applicants for next higher level schools), and general opinions about the new educational system. In addition to the instruments themselves, KEDI has produced a number of publications either describing the instruments or reporting studies in which they were used. (See Appendix)

Teacher Training Materials. Almost all of the materials developed by KEDI for teacher training purposes were developed for in-service training programs to be used by the E-M Project staff for training teachers for the small scale and comprehensive tryouts. These materials include: a Teacher Training Textbook or manual; a slide presentation specifying the purpose of KEDI and the E-M Project, the instructional system, the school management system, the teaching learning materials, and the sub-models for the nine subject areas; two television programs for teacher training procedures; a newsletter, Field Research, distributed to all teachers to aid them in implementing the program; an operational guide for each comprehensive tryout; a manual for the school management system; and a data collection guide. In addition to these training materials specific to the E-M Project, KEDI has developed a series of six books setting forth the educational goals and objectives for each of the six grades in the elementary school. Also, KEDI is now in the process of developing some materials that can be used by teacher training institutions that can help pre-service teachers gain some understanding of the KEDI system.

From 1972 to the present, KEDI has been involved in the development and specification of the school management system for the elementary and middle schools. This management system, which has been described in several KEDI publications,addresses school management at three levels: the school, the grade level,and the classroom level. The key to the KEDI plan is that it specifies within the existing organizational structure modifications to school management that will facilitate and encourage the adoption of the educational system in total and discourage selective adoption and adaptations of pieces of the program.

In addition to the many research and development efforts that have had to go into the development of the E-M Project, KEDI has been involved in other studies that relate to elementary and middle school education but were not specific to the E-M Project. These activities included studies of: teacher training needs in Korea, population education needs, alternative methods of financing education, skills development educational needs, equalization of education in Korea,and vocational education. These studies were in most cases studies conducted to serve as a basis for policy formulation by the Ministry of Education.

H. Field Trial Implementations and Outcomes

A significant aspect of the developmental plan for the E-M Project is the plan by KEDI for small scale tryouts and large scale demonstrations of the new educational system. These tryouts were designed to test and verify the effectiveness of the total system as well as that of each of the components of the system. The four small scale tryouts involved either a single grade or, at the most, two grades, for a limited period of time. The emphasis during the small scale tryouts was to test the feasibility of the teacher guides, student workbooks, programmed materials, ITV and IR, student assessment instruments, and to a limited degree the management system and the evaluation design. The four large scale or comprehensive demonstrations were designed to test the effectiveness of the program in a larger number of schools (originally estimated to include 45 but finally reduced to 16 schools representative of the schools throughout the nation). This sampling of schools would be drawn from schools representing large cities, smaller cities, and rural communities. In addition to continuing to test the feasibility of the instructional system and the supporting materials the comprehensive demonstrations would serve as a test for the teacher training procedures and the total management system. Data from these demonstrations would be utilized as part of the data needed for the "payoff evaluation plan" for the E-M Project.

Tryouts

First Small Scale Tryout. The first small scale tryout occurred between May 14, 1973 and July 5, 1973. A total of 745 students were involved from grades 3 and 5 in two elementary schools in Seoul. The subject matter tested was arithmetic (division and plane and space figures in geometry) and science (life cycle of plants, light and color). The instructional materials used in this tryout included workbooks, programmed materials, assessment instruments for each unit, teacher guides, and ITV programs.

The specific objectives for this tryout were:

1. To verify the feasibility and effectiveness of various instructional materials which KEDI is now developing.
2. To verify the feasibility of a new instructional procedure which KEDI has developed by applying it to mathematics and science instruction at third and fifth grade levels.

3. To obtain information for the improvement of instructional materials and the materials development procedure.

Some of the findings of this tryout indicated:

1. That the general model of Planning, Diagnosis, Teaching-Learning, Extended Learning, and Evaluation seemed appropriate for the two subject areas of mathematics and science.
2. That approximately 90% of the students in each grade in each subject area obtained mastery of the units.
3. That, although revisions in materials were needed, the materials were feasible as packaged for this tryout.
4. That the teacher guide provided good guidelines for the planning of instruction for the units under study.

Second Small Scale Tryout. For the second small scale tryout, 1,482 students from three elementary schools, two in Seoul and one in Inchon, were selected. Twelve second grade classes from these three schools were randomly selected for the experimental group and eight classes in these schools served as the control group. There were 906 students in the experimental group and 576 students in the control group. This tryout, which occurred during November, 1973, included moral education, Korean language and arithmetic. This tryout differed in several ways from the first tryout: for the first time a control group would be used, two different subject areas were selected as well as one remaining the same, and the units would correspond in time and content to those being studied by most Korean children in the second grade in November of this year.

The objectives for this tryout were:

1. To verify the appropriateness of the KEDI general instructional model for instruction at the primary level.

2. To study the effectiveness of the KEDI instructional system compared to the current instructional system.
3. To obtain information for the improvement of instructional materials and material development procedures.

The findings indicated that:

1. There was a significant difference (at the .01 level) between the KEDI group and the control group in all three subject areas.
2. The average achievement score at the end of the tryout was 85% mastery or better for all three subject areas.
3. Although many teachers found the teacher guides very helpful in outlining objectives, the guides were too detailed for teacher classroom use and should be revised.

In summary, as a result of this small tryout the E-M Project system seemed to be appropriate; however, all materials and guides should undergo revision.

Third Small Scale Tryout. The third small scale tryout was for a longer period of time than the first two, extending over an eight-week period from October through November 30, 1974. As in the second tryout, two groups of students were selected, a control and an experimental group. The sample was third graders in four elementary schools: 851 experimental and 690 control. This tryout included content from eight of the subject areas found in the third grade; moral education, Korean language, arithmetic, social studies, science, physical education, music,and fine arts.

The objectives of this tryout were:

1. To validate the feasibility and the effects of the new instructional system, when applied to the classroom instruction, covering all subject matters of one grade.

2. To validate the effects of the new management system in the schools, when part of the variables are put into practice.
3. To obtain relevant information and data for the modification of the new educational system.

In addition to the longer tryout period, this field trial differed from the other two in several other ways: All subject matters of one grade were put into the tryout. This is different from the previous tryouts which dealt with only two or three subjects in the grade level. The sub-models prepared along the lines of special needs of each subject matter were systematically put into the third small scale tryout. A larger number of instructional materials and broadcasting media were utilized, including radio for the first time in any small scale tryout. The timetable for the grade was unified when it came to ITV or IR programs in order to analyze its impacts on the school schedule at large. The instructions utilizing broadcast media were directed by teaching aides instead of the teachers. This was done in order to assess the feasibility of possibly using aides instead of teachers in the new educational system.

The findings of this tryout were:

1. That there was a significant difference between the experimental (KEDI) group and the control group in all content areas.
2. That the role of the aides as defined for the tryout should be re-defined or more clearly defined to students, parents, teachers, and other educators before utilizing the aides in future tryouts.
3. That the teacher guides were helpful but still too detailed in many instances.

4. That the diagnostic and summative tests be carefully analyzed and, in some cases, lengthened before the next tryout or demonstration.
5. That the workbooks were generally helpful but the programmed sections needed to be revised extensively.
6. That the general management system should be reconsidered in light of the reluctance to continue the use of aides.

Fourth Small Scale Tryout. The fourth small scale tryout was for an eight week period beginning May 5, 1975 and ending July 10, 1975. Fourteen classes with 1,050 fifth grade students in two schools were involved for all subject areas. The objectives of this tryout were:

1. To verify the feasibility and effectiveness of the sub-instructional system model of each subject area.
2. To verify the feasibility and effectiveness of the school management system.
3. To verify the possibility of integrating the instructional system and the school management system.

This tryout was similar to the third small scale tryout with the major difference being that of the grade level involved. One other difference of note in this tryout was the elimination of the teacher aides. As a result of the findings in the third small scale tryout KEDI decided to modify the school management plan to eliminate the aides and put more stress on the "special teacher" concept. This plan encouraged each team of teachers to identify one teacher to specialize in physical education, one in practical arts, and one in music, thus reducing the number of subjects each teacher had to prepare each day.

The findings of this tryout were as follows:

1. Determined that there was a difference between the experimental (KEDI) group and the control group in all subject areas; however, this difference was significant in only a few instances.
2. Verified the feasibility of the sub-instructional system model of each subject area recognizing that revisions were necessary in all the materials.
3. Verified the feasibility and general effectiveness of the school management system if continued modifications were made.
4. Decided that teacher training is essential in order for teachers to implement the new system and the length of time provided in the fourth small scale tryout was too short. (5 days - approximately 2½ hours per day).
5. Decided to adopt the new educational system for further tryout in the large scale demonstrations.

Comprehensive Demonstrations. As a result of the findings from the four small scale tryouts and the continued review and reactions to the KEDI plan for the E-M Schools by many professional educators, leadership of KEDI recommended and received approval to initiate the comprehensive demonstrations. Four such demonstrations had been planned for the elementary school and at this writing the staff is currently involved in the last of these demonstrations. The general purposes of each of these demonstrations was the same: to test the feasibility of the new educational system and the evaluation plan and to determine the likelihood of this new system reaching the goals of the project as set forth as "payoff goals". Each of the demonstrations did differ, however, since additional grade levels were added with each sucessive demonstration, new cooperating schools were added, new teachers entered the program, and revised materials and procedures were being tested.

Table 1

Basic Data for the Four Large Scale Demonstrations

	Time	Grades	Subjects	No. of Demonstration Schools	No. of Cooperating Schools	No. of Students	No. of Classes	No. of Control Schools
First	Sept 75 to Feb 76	3 and 5	All	14	127	52,217	806	5
Second	March 76 to Feb 77	3, 4 and 5	All	16	145	96,231	1,611	6
Third	Mar 77 to Feb 78	3, 4, 5 and 6	All	16	164	172,368	3,068	6
Fourth	Mar 78 to Feb 79	2 through 6	All	18	228	240,981	4,172	6

The original plan suggested for the large scale demonstrations had proposed 30 elementary schools and 15 middle schools to serve as "Demonstration Schools" for the tryout. However, as KEDI moved toward the implementation of this plan alternative demonstration procedures began to emerge and were considered. Just prior to the beginning of the First Comprehensive Demonstration, KEDI established a modified plan for field testing which included: Demonstration Schools, Cooperating Schools, and Control Schools.

Demonstration Schools. One demonstration school was to be identified in each province and at least one in Seoul and Pusan. The demonstration schools were to serve as the prototype schools where all components of the system would be implemented, teachers and administrators trained to operate the system, and the evaluation results carefully analyzed to determine the effects of the system.

Cooperating Schools. Cooperating schools were those schools located throughout the nation that had heard about the new educational system and were interesting in becoming involved in testing the system. In order to be considered as a cooperating school, the elementary school had to have the support of the school district, and district administrators had to agree to participate in the teacher training program and to provide certain data to KEDI upon request. These schools received limited assistance from KEDI but did provide KEDI with valuable insight into problems that will arise when the system is ready for national diffusion.

Control Schools. Control schools were those schools identified throughout the nation that would continue to operate the existing educational program and would participate in the evaluation program only. These schools were selected as a representative sample of large city, small city, and rural schools.

The First Comprehensive Demonstration was carried out from September, 1975 through February, 1976 and the tryout group was third and fifth graders. For this demonstration 14 demonstration schools and 127 cooperating schools were involved which provided a tryout of the system in 886 classrooms with 51,217 students. Of the 141 combined demonstration and cooperating schools, 41 were urban and 100 were rural. The 14 demonstration schools included schools from Seoul City and four of the nine provinces. For this first demonstration KEDI provided the demonstration schools with all materials and equipment needed to participate while the local school boards purchased from KEDI these items for the cooperating schools.

The Second Comprehensive Demonstration was for a full school year, March, 1976 through February, 1977. This demonstration included all subject areas for the third, fourth and fifth grades and involved 96,231 students in 1,611 classes in 161 schools. The number of demonstration schools was increased from 14 to 16 and the distribution of these schools throughout the nation was modified from the first demonstration to include three demonstration schools from Seoul City, one from Pusan City and at least one school from each of the nine provinces. This modification meant that nine of the original 14 demonstration schools continued and 7 new demonstration schools were added. The number of cooperating schools increased from 127 to 145 and of the 145, 92 participated as cooperating schools in the First Demonstration. Forty-eight of the schools in this demonstration were urban and 113 were rural. The method of support for the demonstration schools was the same for this trial as for the first trial; however, the funding support for cooperating schools changed. Beginning with the Second Large Scale Demonstration the Ministry of Education added to the budget of KEDI funds to cover the printing and distribution of KEDI developed teacher guides and student workbooks for all recognized demonstration and cooperating schools. This change did tend to equalize the distribution of materials to all schools, but more importantly it simplified the accounting and collection of payment procedures. The option of schools other than the recognized demonstration and cooperating schools participating still remained, and these schools could still obtain the necessary materials and equipment from their own budget. In the Second Large Scale Demonstration three schools participated in this manner.

The Third Comprehensive Demonstration began in March, 1977 and ran through February, 1978. During this trial 172,368 students in grades 3 through 6, in 180 schools representing 3,068 classrooms were involved. The same 16 demonstration schools that participated in the Second Demonstration continued in the Third and 24 cooperating schools were added and five were dropped. This would indicate that the stability of the program was better from the Second to Third Demonstration than from the First to the Second. Again, in this demonstration the balance between urban and rural of 55 to 125 was maintained. During this demonstration KEDI provided materials to 168 of these participating schools while 12 of the cooperating schools were funded for the KEDI materials either by the local board of education (6) or through the local school funds (6).

The Fourth Comprehensive Demonstration which is to be completed by the end of February, 1979 began in March, 1978. For the first semester, at least, all subject areas in grades two through six were included. Two additional demonstration schools were added to the 16 existing ones, one in Jeon Ra Nam Do and one in Jeon Ra Bug Do. Both of these schools had been cooperating schools during the previous two demonstrations. The number of cooperating schools was also increased to 228 with 150 of these schools having participated in the Third Demonstration. The financial arrangements for assisting the schools that were involved in the project changed slightly for this demonstration. KEDI still provided the learning materials and teacher guides to all of the demonstration schools and to 156 of the cooperating schools, with the other cooperating schools purchasing these materials themselves or having them purchased for the school by the local board. However, all 18 Demonstration Schools (one in each province plus one each in Seoul and Pusan City) were recognized and given financial support by the Ministry of Education as KEDI Research Schools.

For each of the large scale demonstrations the implementation plan was similar, being adjusted as needed to meet the needs of the increasing number of schools, classrooms, students and gardes involved. The first step in implementing each demonstration was teacher training. With the exception of the first demonstration the time and format for this activity was rather consistent. For teacher training prior to beginning the first demonstration teachers were assembled at four different locations throughout Korea and participated in five days of in-service training. This turned out to be more than what was needed so for the remaining three large scale demonstrations, teachers were assembled at one school in each province and in Seoul and Pusan for two days of training. During these two days of intensive training teachers were introduced to the E-M Project, the new instructional system, the school management system, the new materials, and how the system should operate. This two day session was to be followed by additional training each week conducted by research teachers and master teachers within the school and by at least two additional days of training conducted by the KEDI staff at the demonstration schools. To provide the teacher training, five teaching teams of four E-M Project researchers each would visit the provinces on a scheduled basis.

A second aspect of the implementation plan was that relating to the use of the learning materials. Each school was provided sufficient numbers of teacher guides, student workbooks, and other materials so that each student and teacher had those materials which were essential to implementing the program as designed. KEDI staff, through visitations to the schools and by phone or letter, tried to insure that this need was met.

Another aspect of the implementation plan was the support solicited by KEDI of the principals and other key staff members from each school. Special seminars, meetings, visits, and other means were employed to assist the leadership in each school in understanding what was desired and why. To assist in this activity the E-M Project staff of KEDI developed a newsletter which was mailed to all participating schools providing suggestions on how to implement specific components of the program. The problems to be addressed and, in many cases, possible solutions were provided by teachers and administrators in the field.

A fourth aspect of the implementing plan for the E-M Project was the plan specifying the duties and responsibilities of the E-M Project staff. Table 2 is a distribution of the KEDI personnel assigned to the E-M Project from 1972 through 1978. These numbers represent KEDI personnel who were assigned specifically to the operation of the E-M Project and does not include other KEDI staff who serviced the E-M Project, such as, the President, Vice President, and administrative support service personnel.

Table 2

Number of Researchers Involved in E-M Project
in the Years 1972-1978

Classif.	*72*	*73*	*74*	*75*	*76*	*77*	*78*
Senior Researcher	*3*	*2*	*3*	*3*	*8*	*11*	*12*
Researcher	*15*	*18*	*23*	*29*	*30*	*20*	*19*
Associate Researcher			*23*	*17*	*9*	*9*	*9*
Intern	*6*	*6*	*4*	*3*	*2*	*1*	
Total	*24*	*26*	*53*	*52*	*49*	*41*	*38*

Personnel assigned to the E-M Project could also be classified as to major functions these individuals performed. In 1972 and 1973 all of the E-M staff (24 for '72 and 26 for '73) were assigned to the Systems Development Bureau participating in general design and development. In 1974, 46 individuals were assigned to the Systems Development Bureau and 7 to Research Planning. The 46 assigned to the Systems Development Bureau were involved in materials development for each of the nine subject areas, general systems development, planning for systems evaluation, and planning for school management. Table 3 is a breakdown of the major classification and tasks of the E-M Project staff from 1975-1978.

As indicated by the functions and tasks listed in Table 3, the E-M Project staff were involved in the following tasks during each of the demonstrations: research related to the new educational system, developing and revising the teaching-learning materials, teacher training, diffusion and operation of the

Table 3

Number of KEDI Staff Assigned to the E-M Project by Year and by Major Classification and Tasks for 1975-1978

Classification	*Tasks*	*1975*	*1976*	*1977*	*1978*
Research and Coordination					
	Research Planning and Coordination	*1*	*1*	*2*	*2*
	System Demonstration		*2*	*2*	
	Instructional and Management System R and D	*9*	*2*	*2*	*2*
	System Evaluation	*5*	*5*	*5*	*4*
	Materials Production		*3*	*2*	*3*
	Diffusion of Innovation	*3*	*2*	*3*	*4*
	Teacher Education		*4*	*3*	*2*
Curriculum and Materials Development					
	Planning and Coordinating	*6*			
	Moral Education	*3*	*3*	*3*	*3*
	Korean Language	*6*	*5*	*3*	*3*
	Mathematics	*4*	*4*	*3*	*3*
	Social Studies	*4*	*4*	*4*	*5*
	Science	*3*	*5*	*5*	*3*
	Music	*2*	*2*	*1*	*1*
	Fine Arts	*1*	*2*	*1*	*1*
	Physical Education	*1*	*2*	*1*	*1*
	Industrial Arts	*1*	*1*	*1*	*1*
	Foreign Language		*2*		
	TOTAL	*52*	*49*	*41*	*38*

demonstration and cooperating schools, continued study of each subject area, and systems evaluation. For each of the tasks there were many specific activities, some overlapping activities related to other tasks, and many requiring the interaction and cooperation with other persons in and out of KEDI.

The specific responsibilities of the E-M Project staff for research related to the new education system included continuing study of the integration of the learning and management system for the elementary school, further research into each of the sub-systems, and research into learning and management systems that would be appropriate for the middle schools component of the project. Research of this nature included a review of the literature on systems theories, analysis of previous tryout results, studies of the relationships between the various sub-systems, how the findings related to the original premises, and the comparison of the systems goals with the actual obtained outcomes.

One of the most crucial and demanding activities of the E-M Project staff was the development and continuous revision of the teaching-learning materials. Table 4 is presented here to give some indication as to what this task included.

Table 4

Types and Quantities of Teaching-Learning Materials Developed for the Four Large Scale Demonstrations

Materials Demonstration	*1st*	*2nd*	*3rd*	*4th**	*4 Projected*
Teacher Guides	*19*	*52*	*70*	*39*	*(86)*
Student Workbooks	*8*	*24*	*32*	*20*	*(40)*
Evaluation Materials	*161*	*492*	*661*	*393*	*(786)*
*TV Programs***	*98*	*159*			
Radio Programs	*29*	*99*			

Note: Does not include materials/programs developed for other purposes

* First semester only

** It should be noted that even though the television broadcasting never was implemented to a degree that could test its viability the E-M Project staff, in cooperation with television production staff, were still involved in the production of television programs.

In addition to the development of teaching-learning materials that would be new to particular large scale demonstrations, the E-M Project staff also had to make revisions on the materials that had been used in the previous demonstrations. Although most of these revisions were of an editorial type, this task still required many man hours per year during the tryout and demonstration years. Also, during this same time period some members of the E-M Project staff were involved in the design and development of a prototype student textbook which would serve as a model for the next revision of the textbooks to be used in the elementary schools of Korea.

Another task of materials development was the development and revision of the teacher training materials. The textbooks for teacher training were developed for the first large scale demonstration and went through considerable revision for each of the next three tryouts. Guides relating to the demonstrations and to school management were developed and revised for each of the tryouts. In addition to the development and revision of these materials. this staff was responsible for developing and coordinating the implementation of the teacher training schedule both for the intensive training days and the field training periods.

The tasks of managing the diffusion and operation of the demonstration and cooperating schools was one shared by nearly all members of the E-M Project staff. Developing criteria for selection, making periodic visits to all of the schools, providing control over the demonstration schools and guidance to the cooperating schools, collecting field data, providing seminars, and encouraging and assisting the schools in developing and conducting their own research projects related to learning and the E-M Project were but some of the activities. All of these activities were essential in preparing the E-M Project staff, the entire staff of KEDI, and the provincial and local boards and administrators for the possible national adoption of the KEDI instructional program.

During each year of the large scale demonstrations each subject area research team was expected to conduct relevant and related research in either some aspect of the curriculum or in teaching methods unique or important to the subject area. These studies, usually led by a senior researcher, were important as a possible data base for major revisions to the instructional system in the years ahead.

The final set of functions and responsibilities of the E-M Project staff as well as the last step in the implementation plan for each large scale demonstration was system evaluation. The system evaluation for the E-M Project has two components - the evaluation of the "intrinsic goals" and summative or "payoff" goals evaluation. The purpose of the intrinsic evaluation is primarily for project improvement. Data collected for this purpose should provide insights as to what materials needed to be revised, what sub-systems needed to be strengthened, what aspects of the project were not being implemented adequately or successfully, and what components of either instruction or management were deviating from the original design. Specific goals that were of concern in the intrinsic evaluation were:

1. Students will have many learning experiences which emphasize the higher level thought processes such as: problem solving, critical thinking and creativity.
2. Students will have many learning experiences which evoke learning and internalization of judgment of value, attitude, knowledge,and productive function directly connected with national development.

3. Student learning rates will be checked periodically and the results will re-input in the process of teaching-learning process.
4. Students will have much more spontaneous learning opportunity.
5. Students will have more appropriate experiences through use of various learning materials and media in the achievement of given learning goals.
6. Students will have more appropriate experiences according to individual differences of learning speed through opportunity of complementary learning, advanced learning, and flexible classroom management.

Payoff evaluation or summative evaluation is that which relates to the "payoff goals" or the effectiveness and reliability of the new educational system. The information provided by this type of evaluation was to serve as an aid to decision makers responsible for determining the future course of the E-M Project. The major goals to which the payoff evaluation was related were:

1. Students will have higher or better achievement
2. Greater cost effectiveness will be obtained
3. Regional gaps in the quality of education will be decreased and this will be reflected in a decrease in the difference of achievement between regions.
4. Educational opportunities will be provided to more children and adolescents.
5. The sense of credibility of the general public about school education will be improved.

The evaluation plan for the E-M Project was developed to answer a multitude of questions that had to be raised for assessing both the intrinsic and the pay-off goals. To assist in gathering data to address the many questions a variety of assessment instruments were developed over the six year tryout period. These instruments have been discussed previously.

I. Selected Decisions Made by and for KEDI

Before moving into a discussion of the results of the four large scale demonstrations, it seems essential to discuss some of the major program-related decisions made by and for KEDI between 1972 and 1978 and how these decisions affected the E-M Project. It is obvious from the scope and size of the E-M Project that this is a major innovative project, and thus many major decisions were made every year. It is not the intent here to discuss every major decision, both good and not so good, that KEDI has made but rather to limit this discussion to some of those decisions that would appear to influence the summative or "pay-off" goals of the project. It should also be pointed out that KEDI is a quasi-governmental institution and as such reports and is responsible to the government for many of its actions. Yet, KEDI does not receive the protection that a true governmental agency does. KEDI as a quasi-governmental institution is somewhat similar to a private institution and therefore must also report to and be responsible to its clients, in this case, the schools and the parents. This unique character of KEDI has been a factor in many of the decisions made for and by KEDI.

One of the early decisions that has definitely affected the entire development and implementation of the Project was the decision to state explicitly as a goal of the project that the new innovative program will be more cost effective than the existing program. The statement as a goal under many circumstances may have been rather trouble-free, but for the E-M Project it has not been. One of the predictions of the Florida State report was, "It is predicted that this program once developed and installed in the nation's schools will not only be cost effective, it will in fact cost less per student to operate than is presently the case". Since the E-M Project was based on the findings of this report and since many educators and government officials knew of this prediction in the report, the goal statement by KEDI has been interpreted as "cost less" and not as only "cost efficient". For this reason KEDI has had to spend many hours trying to clarify this goal and has had to impose many limitations on its development staff in order to hold the cost of the product to a bare minimum. As an example, the cost of the student workbooks was set at approximately 400 won ($.83) in 1975, a figure which has definitely limited the amount and types of exercises possible,thus affecting the instructional outcomes.

One of the most important decisions made for KEDI was the selection of the system for transmitting instructional television. This decision undoubtedly has had a major impact on the project since it has resulted in time and effort of staff in developing a system that is dependent upon television and facing the necessity to substitute teacher directed lessons, modifying the instructional mode and, probably most important, having a system ready for diffusion without a significant component television available.* The lack of television has not only affected the instructional system but has also affected the credibility of KEDI with its clients to some degree.

Early in the design stage of the E-M Project KEDI made the decision to examine closely the recommended educational system of Florida State but not to adopt any component of the system that might be called experimental or that could not fit into the Korean structure. For this reason the recommended school staffing pattern, which depended on large size classrooms, was found unacceptable. The Florida State recommendations of double shifts to gain additional space was eliminated. Also, the heavy dependence of self-study materials which the students could use for study outside of the school was dropped from the plan. These major decisions were probably the correct ones at that time, given the fact that KEDI was dependent upon the acceptance of its design by the schools if it hoped to survive. However, these decisions did mean that there were now a limited number of ways in which KEDI could reallocate existing school expenses to benefit the project since the personnel costs were now somewhat fixed.

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*See Chapter VI for a discussion of the failure of the T-COM technology in television and its results.

The decision somewhat related to these decisions, but actually made during the small scale tryouts, was the decision to drop the concept of differential staffing from the E-M Project management plan. Although KEDI did not accept completely the Florida State proposed staffing pattern, KEDI did propose and try an alternative which would have used paraprofessionals to reduce the number of teachers. This plan was dropped when KEDI was unable to gain teacher or parent acceptance.

This decision along with the others mentioned has meant that KEDI's options for providing more cost effective instruction were even more limited. In essence, this meant that KEDI would now have to concentrate its efforts on improving the instructional effectiveness of the teachers and the organization as it existed. This could be done, but it would mean eliminating some functions of the teachers so they might concentrate on others more essential to the learning process, upgrading teacher skills, transferring some activities from the teachers to the learner, and providing teachers with as many of the instructional resources and aids as possible to reduce non-essential preparation activities. Realization of these factors were the major determinants in KEDI's design and development of its current school and classroom management plan.

Another decision that has undoubtedly affected the outcomes of the project has been the decision to reduce considerably the amount of programmed instruction materials included in the student workbooks. This decision was made for two equally strong reasons. One, the cost of the workbooks would have increased considerably if more pages were added in order to include these materials and, two, there was a reluctance by many teachers and other educators to accept technological devices including programmed instruction because of their seeming dehumanizing characteristics and because they might reduce the need for teachers. There had previously been some unfavorable publicity about the use of programmed instruction, and KEDI was not in a position to offset these criticisms. The effect of this decision has been to reduce the quality and the quantity of self-instructional materials available for the students.

There is another decision which was made early in the project design which will have an effect on the outcome of the project. This decision was to accept the recently revised elementary textbooks as a basis for the curriculum structure for the elementary portion of the E-M Project. This decision, which was a very practical as well as a political one, has placed limitations on the KEDI staff in terms of quality of improvement of the educational outcomes. KEDI, through its Teacher Guides and Student Workbooks, has been able to overcome some of the shortcomings in the textbooks, but only some, so much of the real curriculum and instructional materials development still lies ahead for KEDI.. However, one side benefit that this decision has had on the E-M Project has been that this experience influenced KEDI's decision not to move ahead with the middle school portion of the project, another decision of considerable significance.

KEDI found it expedient to delay the development and implementation of the middle school portion of the project. One reason, alluded to above, was that the textbooks then in use, which would have had to have been the basis for the curriculum structure, were 8 years old and were in need of revision. Also, the KEDI staff was already overcommitted and additional trained manpower was not available. A third reason was that the teachers and administrators in the elementary schools in which the E-M Project was operating were pressing hard for new and different materials for the slower learners. For these reasons and also for financial and political reasons, KEDI delayed the middle school project.

A major decision of an entirely different nature made by KEDI which has had a favorable influence on the credibility of KEDI as well as the outcomes has been the decision of KEDI to include many Korean educators in the design, development, and implementation of the E-M Project. Table 5 gives one example of this involvement when KEDI was developing the curriculum specifications for the elementary and the middle school. This decision was not only appropriate for obtaining the best results possible but was appropriate since it acquainted academicians with KEDI and its goals.

In a similar manner KEDI has involved provincial research centers in the developing and writing of student workbooks; has employed professors and teachers in reviewing and editing materials; has enlisted professionals as consultants to visit the schools, to review plans, and to give suggestions on many matters; and has in other ways involved scholars and the practitioners in the Project. All of these involvements have enabled the limited KEDI staff to receive assistance and guidance, thus providing a better product to the

Table 5

Types of Professionals Involved in Curriculum Specification for the E-M Project

Subject	Senior Researcher	MOE	Professors	Teachers	KEDI Staff	Total
Elementary						
Korean Lang	Univ Prof	1	2	3	2	9
Math	Senior Res		2	3	1	7
Soc Studies	Senior Res	2	7	3	2	15
Science	Senior Res		3	6	2	12
Moral Ed	Senior Res		2	1	1	5
Phys Ed	Senior Res	1	2	6	1	11
Fine Arts	Teacher College Prof			5	1	7
Music	Teacher College Prof	1	2	2	1	7
Pract Arts	Principal	2		4	1	8
Middle School						
English	Univ Prof	1	2	2		6
Math	Univ Prof	1	7			9
Science	Univ Prof		4	8	3	16
Korean Hist	Univ Prof	1	2	2	1	7
Soc Studies	Univ Prof	2	6	3	1	13
Korean Lang	Univ Prof		1	2		4
TOTAL	15	12	42	50	17	136

schools and a product that does reflect the interests and opinions of many who in one way or another will be providing input to the important decision concerning the future directions of KEDI and the E-M Project.

Just prior to the First Comprehensive Demonstration a decision was made by KEDI to modify the field trial and demonstration plan. The original plan had proposed the use of 45 Demonstration Schools, 15 elementary schools the first year, an additional 15 elementary schools the second or third year, and 15 middle schools when the middle school program was ready. However, because of a growing interest throughout Korea in the work of KEDI provincial and local school boards, administrators and teachers were anxious to try the materials being developed. In analyzing the situation it appeared to KEDI that much could be learned about the new system by including more schools as soon as possible. It was evident that such schools, even if they did not require or were not provided the implementation efforts of the demonstration schools, could provide valuable data relevent to a large scale diffusion plan and at the same time could provide more realistic grass roots support for the project. Thus, the decision was made to create the classification of schools known as "cooperating" schools. It should be noted that the leadership of KEDI was well aware of the possible problems that could arise because of this decision but was willing to risk the investment required to gain the additional support and data.

A decision had been made some years ago that affects all schools and all teachers throughout Korea that has had an effect on the outcomes of the E-M Project. This decision was that all teachers were to be rotated from school to school within the school districts every three or four years. This policy has been retained for all schools including the demonstration and the cooperating schools during the years of the E-M Project demonstrations. This policy has had different effects on different outcomes or "payoff goals". On the one hand, having these untrained teachers constantly joining the trained teachers in the demonstration schools where both development and demonstration are being carried out does have an effect on the achievement outcomes. On the other hand, more teachers throughout Korea will have had some experience with the KEDI system when the time comes for diffusion. So, this policy has both negative and positive effects. The problem is, however, can the real or potential achievement effects of the system be assessed adequately to serve as a baseline for comparing degree of implementation when the system is adopted as the national system?

The last two decisions to be discussed are closely related and although they must officially be classified as decisions made by the government for KEDI, they did have KEDI's encouragement and support. These decisions were: (1) for KEDI to take over the duties and responsibilities of the Textbook Compilation Bureau of the Ministry of Education and (2) that KEDI develop a Curriculum Demonstration Center within KEDI. The Korea Times, Sunday, July 3, 1977, reported:

> *The Korean Educational Development Institute will take over the compilation of textbooks for the primary and secondary schools from the Ministry of Education at the beginning of the 1979 academic year, Ministry sources said yesterday. The KEDI, braintrust of the Ministry, will be responsible for the planning, selecting writers, copy reading and editing of the proposed textbooks manuscripts, according to the sources.*

Although this decision placed additional work on an already fully committed E-M Project staff and could probably effect the short-term outcomes of the project, this involvement in all aspects of textbook revisions is essential. One of the primary goals of the E-M Project and KEDI is the development and implementation of a meaningful and relevant curriculum. Since the textbook is the most important translation of the curriculum into operation it was essential that KEDI gain a major decision-making role in textbook development.

Once the decision had been made to expand KEDI's role in the textbook development for elementary, middle, and high school it became necessary for KEDI to organize internally in order to accomplish the tasks expected. To do this KEDI must now expand its curriculum development staff incorporating those staff members who were involved in developing elementary and middle school programs into a larger unit which would include researchers with expertise in secondary curriculum. What the KEDI administration proposed and needed was the legal recognition for the establishment of a Curriculum Development Center which would be adequately funded and granted appropriate decision-making powers to provide the long-term continuity required for curriculum development. KEDI staff who were involved in design and development of the E-M Project did not have the recognition nor the security to consider their jobs as permanent or long-term. Compared to other research institutes in Korea and compared to those who worked under Civil Service, the employees of KEDI received lower salaries and few benefits. Therefore, in order to insure some degree of stability and some assurance of being able to attract and hold the best talent possible, KEDI proposed and has had accepted the establishment of the Curriculum Development Center. Of course the decision to create the CDC does not guarantee that KEDI will be able to accomplish what is expected, but it does increase significantly its chance of doing so.

J. Outcomes of the First Three Comprehensive Demonstrations

As mentioned earlier, the evaluation of the E-M Project included both formative (intrinsic) and summative (payoff) evaluations and required the development of a variety of assessment instruments, techniques, and strategies to collect the necessary data. In addition to the intrinsic evaluation, KEDI also had to include as a part of the formative evaluation plan the evaluation of the degree of implementation and the related assessment of each of the "pieces" that were being developed. Therefore, during each of the comprehensive demonstrations data was collected systematically through both formal and informal means to provide feedback to the developers for revisions of the Teacher Guides, Student Workbooks, teacher training materials, assessment instruments, radio and television programs, and school management practices. Although these individual evaluation tasks are an essential aspect of any developmental project and must be carried out with the same rigor and planning as the other types of evaluation, little emphasis will be given to this topic in this report. The reader is asked to keep in mind that this was an on-going activity and all data should be interpreted with this as a possible influence.

Evaluation of the Demonstration Process/Implementation. The KEDI plan for the evaluation of the intrinsic goals consisted of four steps (1) analysis of the project plans, (2) analysis of the demonstration plan, (3) evaluation of the demonstration process, and (4) evaluation of the resulting implementation. The implementation of steps 1 and 2 in this plan took place prior to and during the small scale tryouts. KEDI researchers, university scholars, school administrators, teachers,and MOE representatives had reviewed and reacted to the goal statements and the plan developed to reach these goals. It was after obtaining reactions to the proposed goals and system plan that KEDI was able to gain support for the comprehensive demonstrations.

Step 3 in the evaluation plan, evaluation of the demonstration process, was essential if KEDI was to have any confidence in the data obtained for measuring the outcome goals. The intent of the evaluation at this step was to determine how closely the implementation agrees with the proposed plan. Do the teachers follow the specified teaching-learning stages? Do the teachers use the Teacher Guides? Do the teachers use the formative and summative tests as prescribed? Does the school follow the approved school and classroom management system? Are the students provided the opportunity to use the Student Workbooks? Do the students use the workbooks in the proposed manner? These questions and others related to the proper implementation of the new educational system are answered by data collected during school visitations and by analyzing data which the schools are to collect at specified times.

As might be expected, KEDI did find differences in the implementation of the system. The schools differed as to their ability to implement, teachers within a given school differed, and there were differences in implementation from the first to the third comprehensive demonstration. In general, the data indicated that it usually takes at least one semester for teachers to learn enough about the system to implement it, the longer a teacher is involved in the systen the better he/she becomes (there is a 2½ year limitation on this statement), and the more experience a school has had with the system the more closely that school's actual implementation approaches the program plan.

In step 4 of the intrinsic evaluation plan, KEDI staff hoped to determine the effect of each component in the plan when the plan was implemented as intended. When the KEDI system and particularly the teaching-learning materials are used is there an improvement in the achievement of students in the higher level throught processes? Do the self-directed learning materials facilitate learning? What effect on the learning outcomes do the enrichment and remedial programs have? Is the teacher able to utilize the diagnostic and formative test results for modifying student learning activities? Does the grade level planning assist teachers in improving their instruction? Does the modified departmental or special teacher plan help all teachers in the team do a better job? Data to assist in answering these and other related questions were collected for each of the comprehensive demonstrations* and reported in detail in final reports for each of the Comprehensive Demonstrations. In each of these reports KEDI has assembled the opinions of teachers, principals, supervisors and students about the new system and many of the questions asked relate to the effects of the system.

In reviewing the data for the first three demonstration, some conclusions can be drawn. Teachers, principals, supervisors, students, and parents have reacted favorably to the new instructional system with each having different opinions about different aspects of it. One exception to this generalization seems to be opinions about the Student Workbooks. All parties seem favorably impressed with the workbooks developed by KEDI, using the same format, for the students with learning difficulties.

A larger percentage of principals and supervisors rate the various subcomponents of the program higher than teachers seem to do. Table 6, taken from the report of the Second Comprehensive Demonstration, illustrates the kinds of differences found.

Better than 70% of the teachers responding find the Teacher Guides, the grade centered management system, departmentalization, the unit plan, the lesson plan, and the suggestions to teacher effective. However, they have not found that they have decreased their preparation time of their general workload.

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* KEDI has published an evaluation report summarizing the results of each of the Small Scale Tryouts and the Comprehensive Demonstrations. See Appendix for listing of these publications.

Table 6

The Merits of New Education System

Comments	Teachers		Principals		Supervisors and Reseachers	
	N	%	N	%	N	%
1. Self directed learning increased	438	72	112	82	84	76
2. Students achievement improved	318	52	95	68	90	80
3. It is possible to realize a balanced operation of the curriculum	283	47	100	73	75	68
4. The professional competency of teachers improved	163	27	104	75	79	73
5. More opportunities for group thinking and cooperative activities of teachers	217	36	85	62	64	59
6. Facilitating the development of higher mental (thought)	235	39	91	66	57	31
7. Higher rate of return realized	47	8	58	44	42	38

One effect in which teachers and students seem to disagree slightly is the effect that the KEDI system has had on the opportunity for small group instruction. The students seem to think it has increased while only about half of the teachers state this as their belief.

Student Achievement. In addition to the data on the opinions of the various parties involved, KEDI has attempted to collect achievement data related to the effect of teaching toward the higher mental thought processes. The end of the year achievement test developed by KEDI included items of skills and knowledge as well as items to measure appropriate higher level thought processes for each of the subject areas. Two tables are reported here which have been taken from the final report of the Second and Third Comprehensive Demonstrations. Each of these tables show a comparison of a sampling of students from the demonstration schools (experimental) against a sample of students from the control schools for each grade involved in the particular demonstration. The scores reported are means of the percent of correct responses for each sample.

The data from Tables 7 and 8 would seem to suggest that the KEDI system is having some small effect on the raising of the higher level thought processes. If one examines the data for the control group over the two years covered by the second and third demonstrations, Table 9, the scores obtained by these groups show a high degree of consistency with possibly two of the differences reaching the significance level. However, there were 13 instances out of 23 for the Second Demonstration and 19 instances out of 31 for the Third Demonstration in which there were significant differences between the experimental and the control group. Reports from teachers and from the KEDI staff have indicated that one of the more difficult tasks in implementing the KEDI system is the teaching of the higher level thought processes. Some teachers do not appear to

Table 7

Differences in the Percentage of Correct Answers and its Significance Level by Group and Behavioral Domain (2^{nd} Comprehensive)

Subject Matter	Behavioral domain	3rd grade				4th grade				5th grade			
			percent of correct ans				percent of correct ans				percent of correct ans		
		No. of item	Exp. 200	Cont. 184	Z	No. of item	Exp. 187	Cont. 184	Z	No. of item	Exp. 187	Cont. 184	Z
Moral	Comprehension	8	84	78	1.49	7	82	73	2.08*	9	69	62	1.46
	Attitude	7	92	91	.34	8	89	79	2.65**	6	88	82	1.66
Korean Language	Knowledge	13	75	64	2.37*	9	81	69	2.69**	5	46	44	.41
	Comprehension	12	75	66	1.93	21	81	69	2.69**	25	69	61	1.66
Social Studies	Knowledge	10	81	71	2.08*	12	63	52	2.15*	16	68	61	1.45
	Inquiry	15	71	59	2.47*	18	60	49	2.14*	14	64	53	2.22*
Mathematics	Knowledge.-Skill	14	79	72	1.59	11	50	42	1.72	18	55	48	1.39
	Comprehension	6	70	63	1.45	14	50	47	.57	7	50	47	.59
Science	Knowledge	12	78	67	2.41*	14	71	59	2.44*	13	72	68	.86
	Inquiry	13	75	68	1.51	16	70	56	2.82**	17	75	63	2.59**
Music	Knowledge	8	65	54	2.20*	7	86	79	1.76	9	63	50	2.63**
	Expression. attitude	7	58	55	.59	8	57	41	3.08**	6	52	44	1.59
Fine Arts	Knowledge	6	68	54	2.82**	7	50	29	4.24**	8	50	47	.59
	Expression. attitude	9	70	55	3.05**	8	76	59	3.55**	7	72	59	2.73**
Industrial Arts	Knowledge	-	-	-	-	9	71	51	4.03**	12	70	56	2.89**
	Comprehension-application	-	-	-	-	6	76	64	2.54**	3	90	72	4.63**

* $p (.05 > .01$

** $p < .01$

Table 8

Differences in the Percentage of Correct Answers and its Significance Level by Group and Behavioral Domain of Test in 3rd Comprehensive Demonstration

Subject Matter	Behavioral domain	3rd grade				4th grade				5th grade				6th grade			
		No. of item	Percent of Correct Ans Exp. N=191	Percent of Correct Ans Cont. N=172	Z	No. of item	Percent of Correct Ans Exp. N=186	Percent of Correct Ans Cont. N-211	Z	No. of item	Percent of Correct Ans Exp. N=186	Percent of Correct Ans Cont. N=217	Z	No. of item	Percent of Correct Ans Exp. N-194	Percent of Correct Ans Cont. N-223	Z
Moral Ed	Comprehension	8	86	80	1.61	8	82	79	1.60	10	74	69	1.05	13	94	86	2.25**
	Attitude	7	90	89	0.45	7	40	85	1.62	5	91	89	1.63	2	88	80	2.26
Korean Language	Knowledge	13	75	63	2.53*	9	81	72	2.01*	5	59	46	2.52**	9	84	64	5.44**
	Comprehension	12	77	70	1.40	21	81	71	2.33*	20	74	64	2.23*	21	79	61	4.78
Social Studies	Knowledge	10	82	73	1.86	12	66	57	2.12*	16	71	60	1.36	8	73	62	2.30*
	Inquiry	15	71	64	1.36	18	64	52	2.33*	14	69	56	2.76*	22	25	60	3.50**
Mathematics	Knowledge Skill	14	80	72	1.90	11	63	63	1.91	18	64	48	3.22**	10	75	64	2.45*
	Comprehension	6	73	66	1.47	14	57	48	1.79	7	54	45	1.92	15	71	56	3.06
Science	Knowledge	12	79	69	2.00*	14	73	60	2.24*	13	77	71	1.52	8	71	50	3.83**
	Inquiry	13	74	69	1.01	16	71	62	1.84	17	80	67	2.95**	22	76	59	3.97**
Music	Knowledge	8	67	55	2.55*	7	63	55	1.52	6	67	55	2.39*	9	78	64	3.17**
	Expression Attitude	7	69	62	1.54	8	58	66	2.36*	9	59	48	2.20*	6	62	49	2.83**
Fine Arts	Knowledge	6	63	58	1.20	7	53	38	3.03**	7	68	53	3.09**	8	68	50	3.64**
	Expression Attitude	9	71	58	2.63**	8	79	64	3.41**	8	77	68	2.17*	7	75	51	5.33**
Industrial Arts	Knowledge					9	63	59	1.16	12	76	61	3.39**	6	78	66	2.70**
	Comprehension Application					6	77	72	1.12	3	89	80	2.63**	9	69	57	2.43*

* p < .05 > .01

** p < .01

Table 9

Comparison of Scores of the Control Group for Second and Third Comprehensive Demonstrations

	3rd		4th		5th	
	2nd	3rd	2nd	3rd	2nd	3rd
Moral Ed						
Comprehension	78	80	73	79	62	69
Attitude	91	89	79	85	82	89
Korean Lang						
Knowledge	64	63	69	72	44	46
Comprehension	66	70	69	71	61	64
Social Studies						
Knowledge	71	73	52	57	61	64
Inquiry	59	64	49	52	53	56
Mathematics						
Knowledge	72	72	42	53	48	48
Comprehension	63	66	47	48	47	45
Science						
Knowledge	67	69	59	60	68	71
Comprehension	68	69	56	62	63	67
Music						
Knowledge	54	55	79	55	50	55
Expression	55	62	41	46	44	48
Attitude						
Fine Arts						
Knowledge	54	58	29	38	47	53
Expression	55	58	59	64	59	68
Attitude						
Industrial Arts						
Knowledge	-		51	59	56	61
Comprehension	-		64	72	72	80

have the skills of teaching to this level and at the same time many teachers report a lack of instructional time to teach what should be taught.

One indication that the KEDI system may be having some effect in this area are the results of the fifth and sixth grade achievement tests for the third large scale demonstration. Fourteen of the sixteen differences were found to be significant at least at the five percent level with seven of the eight differences significant at the one percent level for the sixth grade. This is a hopeful sign but further tests must be conducted before KEDI can have any assurance that the system is in fact effective in improving the learning of the higher mental thought processes.

Achievement of Payoff Goals. Although formative evaluation is of great importance to the developer, questions about summative or "payoff" evaluation are of more interest to funders and clients. The established "payoff" goals for the E-M Project implied that the existing system was not meeting these goals, that these goals are desirable and attainable, and that the new system would achieve these goals better than the existing one. As is the case with all innovative programs, the proof of the value of the innovation rests with the developer. Recognizing this, KEDI has established a plan for the payoff evaluation of the new instructional system. This plan attempted to clarify each of the five payoff goals, listed possible assessment instruments needed, suggested data to be collected, and offered techniques and procedures for analyzing and reporting the data.

Payoff Goal 1. "Higher achievement tendency is observed among students". KEDI defined achievement as the academic achievement of students as reflected in the specified educational objectives of the schools. It was an expectation of the program that the student achievement would improve and that the variance of achievement among students would be reduced. Over the three comprehensive demonstrations for which there was data available, it appears that the E-M Project is moving toward the attainment of this goal or at least that portion of the goal relating to higher average achievement. One indication of this is the information previously presented in previous tables. Data obtained through end of the year achievement tests show that in all subject areas and across all grades 3 through 6 the sample of students from the demonstration schools score higher than sample of students from the control schools. In addition to these data, KEDI had developed a Test of Basic Skills as a more general test of achievement for elementary and middle school students. Table 10 shows the comparison of the demonstration school sample to the control school sample for each grade for each of the demonstrations.

From these two sources of data it would appear that there is an increase in achievement when the KEDI system is used. One interesting piece of data relative to student achievement is that pertaining to the comparison of the percent of students in each group that were able to obtain the desired mastery level. Since mastery learning is one of the instructional procedures used in the E-M Project system with the assumption that attainment of mastery of each unit facilitates both general and specific achievement, it was expected that the demonstration sample would show a consistently higher percentage of students reaching mastery. As indicated by Table 11, this was the finding for the first three comprehensive demonstrations.

These data would tend to indicate that if the trends indicated continue, then the new instructional system may reduce the variance as desired.

Table 10

Comparision of Mean Achievement of the Demonstration Schools to the Control Schools as Measured by the Test of Basic Skills

	Base Year	First Demonstration	Second Demonstration	Third Demonstration
Third Grade				
Demonstration	*61*	*63*	*72*	*74*
Control	*63*	*58*	*63*	*68*
Fourth Grade				
Demonstration			*69*	*74*
Control			*59*	*59*
Fifth Grade				
Demonstration	*57*	*60*	*72*	*74*
Control	*56*	*50*	*60*	*60*
Sixth Grade				
Demonstration				*74*
Control				*62*

Payoff Goal 2. Greater cost effectiveness will be obtained. This is probably the one goal that KEDI will have the most difficult with in presenting data that will satify all concerned. The problem here is one of meaning and acceptance of a viable definition. First of all, it is difficult to get reliable baseline costs from which to compare the current operational costs of the E-M Project. Next, it is difficult to determine how much better the new instructional system is when compared to the old one. And, third, all the data from the Fourth Comprehensive Demonstration is not available for review and analysis. If, however, one were to make some approximations as to cost effectiveness without complicated long term, society benefit, (etc.) formulas,

Table 11

Comparison of the Percent of Students in the Demonstration and Control Groups Obtaining Mastery in Each Comprehensive Demonstration

	First Demonstration	*Second Demonstration*	*Third Demonstration*
	Percent	*Percent*	*Percent*
Third Grade			
Demonstration	*31*	*46*	*43*
Control	*20*	*23*	*27*
Fourth Grade			
Demonstration		*40*	*44*
Control		*20*	*9*
Fifth Grade			
Demonstration	*23*	*41*	*42*
Control	*12*	*20*	*9*
Sixth Grade			
Demonstration			*49*
Control			*13*

the conclusion could probably be that it is cost effective.

The costs of workbooks will add about 450 Won per pupil per year, the cost of Teacher Guides will add about 1200 Won per teacher per year. All other costs are directly related to the training of teachers and upgrading the instructional equipment in the schools. As to the upgrading of the skills of teachers, this is an observed need regardless of what takes place in Korea. There are many teachers who were employed at a time of real shortage of teachers and who were placed into the classrooms with minimal training. The specific features of the KEDI system do provide a good basis upon which to develop a meaningful teacher in-service program which would be transferable from school to school and grade to grade within schools. The systematic structure of the KEDI system is such that training materials can be developed which will assist principals, supervisors, and head teachers in conducting continuous in-service programs within a given school over a long period of time and as followup to more general programs that may be developed for initial start up. Visits to many schools over the past four years by KEDI staff have indicated to them that there is a real lack of educational equipment and learning resources in most of the schools. Again, given the structure to the new educational system developed by KEDI, it should be possible to upgrade these materials in a systematic manner providing fewer opportunities for schools to invest in materials that may not meet the most pressing instructional needs of the students.

In summary, it is not possible to come to any real conclusions as to the cost effectiveness of the new instructional system but in light of the original constraints placed upon KEDI, this new system does appear to have an advantage over the existing one.

Payoff Goal 3. Regional gaps in the quality of education and school differences will be reduced. KEDI states in its "Payoff Evaluation Plan of KEDI New Educational System" that "the gaps in the quality of education among schools and regions are assumed to be found in the two dimensions of the educational system: input and output dimensions". This document goes on to state that the quality of teaching physical facilities as input dimensions are assumed to be caused in the output quality, recognizing at the same time that there may be other causes. The KEDI instructional system was developed to affect the quality of teaching and to get maximum utilization possible of the physical facilities available to reduce these input gaps and to therefore reduce the output gap -

identified by KEDI as student achievement. Prior to the implementation of the comprehensive demonstrations, a sample of urban and rural students were tested to determine the regional gap in achievement. Table 12 is a shortened version of a table that was reported in the KEDI document, "1974 National Assessment of Students Achievement Progress - Elementary and Middle Schools."

Many Korean educators supported these findings since they verified other data available relating to possible regional gaps. For each of the comprehensive demonstrations, KEDI has examined the achievement test results of samples of urban and rural students to determine what impact, if any, the KEDI system was having. Table 13 is a set of data from the Third Comprehensive Demonstration. It would appear that the KEDI system may be having some effect on the reduction of this regional gap, especially in the third, fourth,and fifth grades. Based upon similar findings from the first and second demonstrations, the KEDI system does appear promising in this respect.

Table 12

Mean and Standard Deviation of Achievement Test Scores for Urban and Rural Students in Grades Three Through Six in the Third Comprehensive Demonstration

Region		Grade				
		3	4	5	6	Average
Urban	M	66	63	64	70	66
	SD	20	22	21	22	22
Rural	M	55	51	53	60	55
	SD	21	21	21	22	21
Difference U R		11	12	11	10	11

Table 13

Mean and Standard Deviations of Achievement Test Scores for Urban and Rural Students from both Demonstration and Control Schools for the Third Comprehensive Demonstration

		Grades									
Region		*3*		*4*		*5*		*6*		*Average*	
		Demo	*Cont*	*Demo*	*Cont*	*Demo*	*Cont*	*Demo*	*Cont*	*Demo*	*Cont*
Urban	*M*	*76*	*73*	*76*	*64*	*75*	*63*	*78*	*67*	*76*	*67*
	SD	*13*	*15*	*15*	*14*	*14*	*14*	*15*	*14*	*14*	*14*
Rural	*M*	*72*	*65*	*73*	*52*	*73*	*57*	*70*	*58*	*72*	*58*
	SD	*14*	*19*	*17*	*16*	*14*	*14*	*15*	*14*	*15*	*16*
Mean Difference U R		*4*	*8*	*3*	*12*	*2*	*6*	*8*	*9*	*4*	*9*

Payoff Goal 4. Educational opportunity is expected for more children and adolescents. In further defining this goal KEDI has stated: This goal means that the educational opportunity can be expected with the following three changes.

1. The number of students who drop out or do not advance to the next higher level of school because of low learning achievement or lack of basic skills can be reduced.
2. Part of educational television capacity can be used to broadcast the social education program to the youth and adults in the non-formal educational system.
3. The possible reduction of the educational costs in the middle school can contribute to increasing the possibility of extending the compulsory schooling from six years to nine years.

Since the evaluation of this goal is dependent upon the KEDI system being in operation long enough for sixth graders to have studied under this system, on the operation of the educational television system, and on the middle school program being developed and implemented in order to determine costs, it is impossible to even make an educated guess as to possible outcomes.

Payoff Goal 5. The accountability and credibility of the general public on school education is boosted up. In addressing this goal KEDI has stated that the new educational system is going to introduce an instructional system which will employ advanced teaching methods, multi-media and materials, and a modernized school management. Under this new system teachers are expected to concentrate their time on instruction and guidance, and the students are also expected to have higher learning achievement tendency. Beside these, the expected outcomes are the efficient use of educational cost, expansion of the educational opportunities, and the use of educational television for social education program.

Such effects, if brought about by the new educational system, will boost the accountability and credibility of schools, thus developing in the parents and the public as well as students positive and cooperative attitudes about the new system. The improvement of the school's accountability specifically denoted the following:

1. Students and their parents think that the schools are functioning efficiently, with a good quality of programs improving student learning achievement.
2. Students and their parents give credit to the school education for its contributions to developing in the students desirable habits and attitudes.

3. Parents and general public believe that school education is in the right direction toward solution of the educational problems.

It is not surprising that attempts by KEDI to examine their outcomes relative to this goal are inconclusive. Parents surveyed do seem to support the types of activities KEDI has been involved in to date, but without television, without the complete program for the elementary school, and without adequate time for parents to view and react to the system, data relative to this goal will be minimal at this time.

Summary. KEDI, through its E-M Project, has been able to move toward the accomplishments of some of the stated goals, especially those goals that can be obtained in a relatively short period of time. To do this many compromises on the original plan have had to be made. Among these the most significant ones are, (1) the modification of the instructional system to offset the lack of ITV and (2) the delay of the development of the middle school portion of the program because of lack of trained manpower and lack of adequate funds. However, in spite of these two major limitations, KEDI has demonstrated a research and development capability is reflected in the processes and products which have been developed, field tested, and incorporated into the system.

Instructional Materials. To implement the new instructional program, KEDI has developed Teacher Guides, Student Workbooks, diagnostic and formative tests which appear in the Student Workbooks, and summative tests for end of the unit student assessment. A Teacher Guide has been developed for each of the nine subject areas taught in the elementary school for each grade for each semester. Since Practical Arts is not taught as a separate subject area until the fourth grade, this means that 86 separate Teacher Guides providing over 4,700 hours of instruction have been developed and field tested. Table 14 shows the approximate number of hours provided for in each of the subject areas annually for all five grade levels, second through six.

Student workbooks have been developed for the subject areas of Korean Language, Social Studies, Mathematics and Science for each semester for grades 2 through 6. The 40 Student Workbooks provide over 2,800 hours of instructional materials to assist the student in obtaining mastery. As has been indicated earlier the size of these workbooks, thus the number of hours and type of instruction that can be provided, has been limited in order to make these materials economically feasible. The current limitation of approximately 400 Won (83 cents) has severely limited the extent of self-instructional and remedial materials that can be incorporated into each workbook.

Table 14

Approximate Hours of Instruction Provided by the KEDI Instructional Materials per Year

	Teacher Guides		Workbooks	
	Number	Instructional Hrs.	Number	Instructional Hrs.
Korean Language	10	1,050	10	1,020
Social Studies	10	560	10	526
Mathematics	10	770	10	740
Science	10	595	10	570
Moral Education	10	350		
Physical Education	10	525		
Music	10	350		
Fine Arts	10	350		
Practical Arts	6	245		

NOTE: "Instructional hours" represents total instructional hours provided by Teacher Gudies or Workbooks at all grade levels combined for a complete academic year.

A key component to the KEDI instructional system is the regular diagnosis and assessment of the students as they move through the program. Approximately 170 diagnostic tests, 450 formative or progress check tests, and 200 summative or end of the unit tests have been developed. Since these tests are a critical component of the system, KEDI researchers have devoted adequate time and talent to their development. The great majority of the tests currently in use do sample the subject domain, are easily administered and scored, adhere to the time limitations of the instructional class period, and guides for interpretations are provided to the teachers. Because of the care and concern in developing these instruments, better than 90% of the teachers and principals report that these tests are administered and used.

One further comment on the instructional materials should be made at this point. Distributed throughout the Teacher Guides and supported by materials within the Student Workbooks are suggestions and procedures for implementing small group learning activities. These activities are incorporated into the system in order to assist students in reaching some of the learning objectives that relate to the higher level thought processes. The suggestions and activities that are included are well organized and appear meaningful if used. However, since activities of this nature require additional planning, clear expectations of outcomes and classroom organizational skills on the part of the teacher, as well as additional class time,and often space and many times other supplementary materials and equipment, these activities are often ignored, handled in large group sessions or are tried but not carried out completely. From all indications this is one feature of the program that requires continuous review by KEDI and the school supervisors.

Radio Programs. Through the three comprehensive demonstrations radio programs have been developed and implemented as a part of the instructional system. These programs which are about 20 minutes in length were designed as an integral part of the system and as such are references in the Teacher Guides. Each semester KEDI developed a schedule of the times and days that the programs were to be aired and each school and teacher received a copy. However, as might be expected, not every teacher was ready to use the radio program at the times it was aired, and not all school schedules matched the prototype schedule developed by KEDI or the Ministry of Education so an alternative strategy has been established in some schools of taping the radio broadcast and replaying it at the appropriate time. Because the quality of these programs varies considerably, because of the problems of adjusting schedules,and because some schools do not have adequate radios or taping equipment or the capability of receiving the program, the implementation of this portion of the system has been weak. Teachers report many problems associated with incorporating the radio programs into the daily lesson strategies with about 60% of the teachers reporting that the programs as presented fully utilize the media for its potential. In general teachers do support the continued use of radio but would like to see many of the problems of its use eliminated as soon as possible.

Management System. The implementation and evaluation of the School Management Sub-system of the KEDI plan is beginning to gain greater acceptance by the teachers and principals. The management system has as its components: school and grade level management by objectives, departmentalization of some subject areas (music, physical education, practical arts), sharing of responsibilities by teachers for in-depth study and preparation of resource materials for daily classroom use, student cooperative learning strategies to enhance small group learning experiences. In their evaluation of the school management system, teachers indicated that it assists them in carrying out their daily responsibilities, aids them in recognizing overall school objectives, helps in coordinating daily and weekly schedules, and has resulted in a decrease of the time required to prepare for teaching. They further reported that the strategy of having a single teacher on a team do the in-depth preparation of one subject area and then sharing this with other members of the team helped them to gain a deeper understanding of the assigned subject. They also spoke favorably of procedures that called for joint participation in teams and on a school wide level. Recognizing that the school management system is an integral part of the total KEDI education plan, this support is very important to the achievement of educational goals of the KEDI system.

J. Conclusions

The Elementary-Middle School Project of KEDI was initiated for the purpose of modifying the educational programs in Korea. Primarily based on a study of the existing education by a team of scholars from Florida State University and validated by Korean scholars the E-M Project was started in 1972. The major goals of the Project were and still are:

- o To improve the achievement level of students (including achievement of higher level thought processes)
- o To reduce the regional achievement gaps
- o To provide a more cost effective system
- o To provide educational opportunities for more students
- o To improve the image of the schools in the minds of the general public.

To meet these goals, KEDI designed an educational system which drew upon the recommendations of the FSU team but then modified those components which KEDI thought would be too experimental or otherwide unsuited to the Korean society. As might be expected with any major innovative plan, the original plan by KEDI for the E-M Project had to be modified over time. Figure 7 is an attempt to pull out some of the critical components of the FSU plan and the original KEDI plan and to compare these to the E-M Project as it was being implemented at the close of the Third Comprehensive Demonstration.

The questions that must always be raised in reviewing large scale developmental projects are: What modifications were made? Why were they made? What possible or probable effects do the modifications have on the outcomes? Has the developer actually implemented that which was set out to do? Figure 7 highlights the modifications from the planned to the implemented program. All of the modifications have been discussed previously with implied if not explicit reasons presented for the modifications. The effects of these changes on the outcomes are of course only the opinions of this review team and are presented as possibilities.

The limitations placed on KEDI for curriculum revision has meant that the major curriculum revision efforts may still lie ahead. Without the freedom to completely restructure some of the subject areas, to combine concepts and processes across subject lines, to identify topics within each curricula area that can be eliminated or moved to a higher grade level, KEDI curriculum changes have consisted of additions of the type that can be reflected in the Teacher Guide and the Student Workbook. However, KEDI's greatest contribution to curriculum development probably can be found in the detailed analysis and specification of objectives of the curriculum as reflected in the 1973 revision of the elementary

Figure 7

Comparison of Various Components of FSU Plan, KEDI 1972 Plan and Current Plan for the E-M Project

FSU Plan	1972 KEDI Plan	Current Plan	Reasons for Change
1. A systems approach would be used in developing the Plan.	1. Incorporated	1. Utilized	
2. The curricula would be reexamined and reformed in order to better align them to national goals, to improve higher level thought processes (inquiry, problem solving), and to retain skills and knowledge objectives.	2. Incorporated	2. Carried out the analysis of curricula and some reformulation of the curricula	2. KEDI was restricted in its modification efforts because it had to stay with the 1973 textbooks for use in the elementary school.
3. The objectives of the curricula will be carefully defined	3. Incorporated		
4. Korean educators would be responsible for the curriculum specification	4. Incorporated		
5. Individualization of instruction to be a key component	5. Modified to include some individualization	5. Modified to reduce further the amount of individualization	5. Was originally modified because individualized, system were still too experimental. modified further because of the costs of including individualized materials into the program.

Organize the schools into instructional units of 300. Students taught by a team of a master teacher, teachers and teacher aides (differentiated staffing) with a 50-1 ratio of student to adult.	*6. Adopted the intent but not the exact plan for differentiated staff. Kep the same 70-1 student teacher ratio but added an aid to help.*	*6. Has been modified to now include grade level instructional terms with a teacher assigned to a group of students, music, physical education and practical arts departmentalized, and individual team members responsible for indepth preparation of lesson plans.*	*6. KEDI did not have the legal authority, the political influence or the teacher and parent support to make this change. Also KEDI was not able to get the needed additional classrooms that would be needed to implement the FSU plan.*
Have children spend less time in a school and have 2 or 3 shifts of students in a given school. (To provide more classroom for the same number of students and to provide space for more students)	*7. Not accepted*	*7. Not accepted*	*7. Found to be an unacceptable alternative by KEDI and other Korean educators.*
Heavy use of Programmed Instructional materials	*8. Included*	*8. Modified drastically*	*8. Because of the limitations of the size of the workbooks that could be employed the amount of programmed instructional materials had to be reduced and in some cases eliminated.*
Instructional TV and radio to be an integral part of the system. Students would receive 1½ to 2 hours of ITV per day.	*9. Included*	*9. Instructional radio included but ITV has not been*	*9. Until very recently (1978) both IR and ITV integral components of the KEDI system. However because of the TV broadcasting problems encountered by KEDI the system has been develop and field tested without ITV. The experiences with IR have caused KEDI*

			to reexamine some of the original assumptions for including ITV and it now appears that KEDI will use TV as a supplement to instruction. KEDI still plans to use ITV for teacher inservice training.
. Self contained "student learning units" to be included	10. The intent adopted	10. Student workbooks do provide for units of instruction with diagnostic, formative (progress check) and summative tests as well as some practices and self instructional materials. However, these do not meet the more rigorous definition of 'self contained' student learning units"	10. As in 8 above, the limitations of size of workbooks because of student cost concerns has restricted KEDI in this area.
. Reduce reliance on the teacher in the learning process	11. Included	11. Modified because of reduction of programmed instruction, ITV and IR.	11. The KEDI system still depends heavily on the teacher as a purveyor of information and as the essential feedback component in the system. This is related to 8, 9 and 10 above.
. That both the elementary and middle school programs would be revised.	12. Incorporated	12. Only the elementary school program has been field tested through comprehensive demonstrations	12. Because of the lack of trained manpower, because of the need to revise the middle schoo textbooks and curriculum this portion of the plan has been delayed but not eliminated.

textbooks. This step is a major first step that must be undertaken in any curriculum development project.

One of the important components of the FSU plan was that of individualization of instruction. To facilitate this the plan also included self-contained student learning units and programmed instruction materials. If these aspects were included, it was the belief of the FSU team that more of the instructional responsibility could be placed on the student and more of the learning could take place outside of the school. Although KEDI and other Korean educators recognized the need to increase the quality and quantity of individualized learning experiences, they never went as far as the FSU report had recommended. However, as the program is now operating there is a very limited amount of individualized instruction in use. The instructional design that has been incorporated into the system readily lends itself to this type of instruction but the current pupil-teacher ratio, the size and style of the student workbooks, and the absence of instructional hardware place real constraints on KEDI's abilities to further expand to any significant degree this component. The effect that this limitation has on the outcomes is probably substantial, yet the cost of achieving the degree of individualization originally planned is undoubtedly beyond the financial resources available.

The final component to be mentioned that differs from both the FSU report and the original KEDI plan and the implementation plan is the use of ITV. The absence of this component has been referred to several times previously so will be mentioned but briefly here. An interesting finding has come out of the E-H Project relating to the ITV. There was a basic underlying assumption associated with the selection of ITV as an instructional delivery system. That was, since all of Korea is in one time zone an ITV program could be scheduled for two or three showings and this would then provide enough flexibility for classroom use. However, the experiences KEDI has had with radio broadcasting has indicated that this is not so. It appears now that if KEDI does want to continue the original plan of ITV then schools will have to find ways to record the program and rebroadcast them internally at times other than the scheduled ones. The effect of not having the ITV available as planned has probably had its greatest impact on upgrading the quality of teaching and instruction. Teachers do not have appropriate instructional aids and equipment to implement all that is expected and some are not able to implement properly that which they have. ITV, as planned, could have helped in both cases.

In comparing the planned and the implemented E-M Project, it is obvious that many changes or modifications took place. The total effect of these changes has been to: (1) develop an alternative plan to the FSU plan and (2) implement a reduced version of the original KEDI plan. With the possible exception of ITV, KEDI has been able to design, develop, and demonstrate the major components of the E-M Project plan even though each of the components have had to be reduced in scope mainly for cost reasons. The achievement level of students in the demonstration schools has improved. There are signs that the regional differences in achievement have been narrowed. There are indications that the parents as well as teachers and principals support the new educational system. And, there are indications that more concern for and the resulting change in higher level thought processes are in keeping with the KEDI plan.

Because of these favorable indicators, the Ministry of Education established an independent evaluation team to validate the findings of KEDI and to report to the Ministry its finding and recommendations for further action. It is predicted that this team will support the findings of KEDI, will recognize the potential that the system has for continued revision and improvement, will recognize the real need for upgrading the skills and practices of the teachers and will, therefore, recommend national adoption of the KEDI system. (See K below) If this is so, then the Ministry of Education will have to recognize KEDI as a legitimate research institute on a par with other national institutes of research and provide funds and job security similar to the others. KEDI, in cooperation with the MOE, will have to develop a diffusion plan that can provide for a time line of implementation that recognizes the current limitations of the KEDI staff but at the same time move ahead at maximum speed. This will require the full cooperation of the MOE, the provincial research centers, the various administrative units, teacher training institutions,and university schools of education. KEDI staff will have to be involved in the diffusion, but in an orchestrating or coordinating role. Also, KEDI must be given the time and resources to continue the needed research and development that will bring the new system to its more significant potential.

K. Additional Information Provided by the Report of the National Commission to Evaluate the New Education System*

In May, 1978, the Korean government appointed a National Commission to conduct a comprehensive evaluation of the Elementary-Middle School Development Project and the new educational system proposed. The task assigned to the Commission was (1) to review the effects and outcomes of the new educational system as implemented in the E-M Project, and (2) to provide the Ministry of Education with the basic data required for decisions relative to the national implementation of the new educational system.

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* This report, which became available following the completion of work by the Case Study Team, is summarized here as an additional statement relative to the progress of KEDI in the E-M Project.

The members of this Commission included the following individuals: eight professors from higher education institutions, six officers from the Ministry of Education, five school principals, three directors of educational research institutes of regional boards of education, and six researchers from KEDI.

The areas on which the evaluation studies were focused included: (1) the new educational system model (instructional system and school management system), (2) instructional materials, (3) effects and outcomes of the new system as reflected in the demonstration and cooperating schools. The period of the evaluation study covered five months, May through September, 1978. Eighteen demonstration schools were directly involved in the study.

Evaluation procedures utilized by the members of the Commission included: (1) assessment of student achievement, (2) validation of instructional materials, (3) opinion surveys of teachers, students, parents, supervisors, and researchers, (4) field surveys and observation in the schools.

The findings of the Commission were positive and unequivocal. The new instructional system was found to be both effective and efficient. The new instructional plan, in the conclusions of the Commission, assisted teachers to be more efficient in their roles, facilitated a management by objectives approach to instruction, placed emphasis on self-directed, learning, improved diagnosis of student deficiencies, promoted the use of remedial and enrichment programs, and provided a continuing evaluation of student achievement relative to specific educational objectives.

Instructional materials developed for use in the new educational system also received high marks. The Teacher Guides were viewed as especially effecitve in the presentation and definition of specific instructional objectives, in their emphasis on the higher mental processes such as creativity and problem solving, and in their provision for suggestions for systematic instructional procedures.

The Student Workbooks were considered particularly valuable in terms of enrichment and remedial learning and in their concern for discovery learning processes.

The school management system, in the view of the Commission, was serving the objectives of the new educational program and the instructional system being utilized. Specific reference was made to management by objectives, to periodic evaluation processes, to cooperative sharing of responsibilities among teachers, to grade centered management, and to flexible grouping of students.

Through the utilization of a number of examinations specifically designed for the study and administered to students in both the demonstration schools and the control schools, the Commission identified significant achievement outcomes for the E-M Project. Students in the demonstration schools that were utilizing the new instructional system socred significantly higher in all subject fields - Korean language, mathematics, social science, science, final arts, and music. A total of 85.6% of the students in the demonstration schools achieved mastery or near-mastery in their learning as compared to 53.2% in the control schools. One other finding is especially important in view of the concern of Korea for differences in educational achievement between rural and urban children, with the former ordinarily achieving at a considerably lower level. The tests administered in the Commission study showed that students in the rural area demonstration schools scored higher than did children in the urban area control schools.

At the conclusion of the study the Commission made the following recommendations:

1. The new educational system developed by KEDI should be implemented nationwide on a gradual basis following a carefully planned time schedule.
2. The Elementary-Middle School Project should become an integral part of the long term educational plan for educational reform by the Ministry of Education.

3. The Ministry of Education should have the responsibility for the implementation and diffusion of the new educational system and KEDI should assume the task of follow-up studies aimed at revision and improvement.
4. KEDI should develop effective programs for pre-service and in-service training of teachers relative to the new educational system and to the improvement of teaching generally; these programs should be reflected in the curricula of teacher training institutions.
5. The costs of nationwide implementation of the new educational system should be assumed by the national government; however, alternative methods of financing should be studied.
6. Improvements in the new educational system should include guidance programs, programs for slow learners, and school management guides.
7. The Ministry of Education should provide KEDI with appropriate administrative support for its added role in the national implementation of the new educational system.

L. National Implementation of the E-M Project

KEDI has developed a tentative plan for the national implementation of the Elementary-Middle School Development Project. The basic elements of the proposed plan include the following:

1. The implementation will occur on a gradual basis in the elementary schools of the nation probably over a period of several years.
2. First priority in the national implementation will be given to schools in remote and isolated areas of the nation, with other regions being added on a planned basis over a period of years.

3. Initially KEDI teaching-learning materials will be used concurrently with the present textbooks until 1983 when new textbooks will be available.
4. The new elementary school textbooks will incorporate present KEDI teaching-learning materials as integral parts of the textbooks.
5. KEDI will develop and administer a training program for resource persons who will act as in-service teacher trainers for teachers in the local areas prior to and during the implementation phase.
6. KEDI will develop pre-service training materials for the use of Junior Teachers Colleges in the training of new teachers.

It is anticipated that KEDI will present a complete plan for national implementation to the Ministry of Education by April 1979.

CHAPTER VI

EDUCATIONAL BROADCASTING

A. Educational Radio and Television in Korea Prior to KEDI

With the establishment of KEDI in 1972 came the development of a radio and television broadcast system established exclusively for education purposes under the Ministry of Education. Previous to 1972, all broadcast systems in Korea were the direct responsibility of the Ministry of Culture and Information.

Korea's first broadcasting effort was with radio programming in 1942. During the Japanese occupation, all broadcast systems were controlled by the Japanese Government. When the Republic of Korea was established in 1948, the Korean Government took over the broadcast system, which at that time had developed to nine regional stations. And until 1954, this was the only broadcast system in Korea. In 1954, the first religious radio station began to operate in Seoul. In December 1961, a totally government operated television station was established. In 1968, a reorganization and integration of existing broadcast systems were effected and in May of 1969, the first use of television for educational purposes was made by the Korean Broadcasting System (KBS).

KBS is a nationwide radio and television system operated by the Korean Government under the direct supervision of the Ministry of Culture and Information. Its broadcast of education programs is limited to less than ten percent of the weekly broadcast time. The education programs are considered supplemental in nature and generally are designed for enrichment purposes only. Most are directed to elementary and secondary school grades, covering in general ways such subjects as science, music, and fine arts.

B. Recognition of the Need for a New Educational Broadcasting System

This limited use of broadcast capabilities in terms of (1) amount of broadcast time given to education, (2) subjects presented, (3) grade levels covered and (4) curriculum relatedness, is viewed as inadequate for the educational needs by Korean scholars today.

The primary purpose of KEDI's educational broadcasting system was to enhance instruction in the elementary and middle school classrooms throughout Korea as a basic component of educational reform envisioned by KEDI's new instructional model. Radio and television programs were to be "instructional" in use. That is, the television and/or radio program was to be the primary teacher of the content to be learned by the students. An instructional unit was to be designed for the subject matter content under study. This instructional unit would rely on television and radio at specific points and times in the unit to be the primary provider of the information the students were to learn. The determination of what content was to be presented via television and radio was to be decided based upon the uniqueness of television and radio as a teaching method. The objectives and the instructional unit that could best be accomplished by television and/or radio would be presented by television and/or radio. Likewise, the objectives that could best be accomplished by the classroom teacher would be presented by the classroom teacher.

In addition to the direct use of television and radio for instructional purposes inside the classroom, KEDI planned for television and radio to be used for general education purposes as well. This role was different from the instructional role in that it may or may not be directly related to an instructional unit or specific classroom activities at a given point in time in the classroom.

With these two basic roles in mind, KEDI planned for television and radio to be a major component of the E-M Project. It was herein that the instructional role of television and radio was to be an integral part. In addition to the E-M

Project, television and radio were to be used in special KEDI projects such as the Air and Correspondence High School, Pre-service and In-service Teacher Training, and the Sinahn County Broadcast District.

It was anticipated that KEDI's new instructional model and its use of television and radio would help equalize educational opportunities between the rural and urban areas of Korea. Such resources as museums, concerts and symphonies, competitive sports and athletics competition, all so much a part of the urban students' daily living, could be routinely shared via television and radio with rural students. In the absence of such, these events remained outside the rural students' existence, except during those rare and sporadic journeys to an urban center. Also, better teachers could be shared with more students via television and radio and thereby raise the quality of education for more students than is possible in one classroom with one teacher.

In addition to this school-related educational use of television and radio it was anticipated that television and radio would be used in general educational activities for adults, such as life long learning, community education, improved farming techniques, better sanitation methods, and other relevant projects.

C. Implementation of the New System

Authorization. The formal authorization of the educational broadcasting station was established by KEDI Law #2616 and the Enforcement Decree, Presidental Decree #6899 on October 11, 1973. On May 14, 1974, the groundbreaking ceremony for the broadcasting station took place at its site in Umyeon-Dongsan, Gangnam, near Seoul. On December 9, 1973, construction on the transmitting site was begun at its site near the town of Jecheon in the North Chung Chong Province.

The Tethered Communication Corporation (T-COM) of Westinghouse Corporation and the Ministry of Education developed a contract effective as of December 12, 1972, for the purchase of all of the necessary transmitting equipment. The National Assembly approved the loan proposal on February 26, 1973, and the loan agreement between the Ministry of Education and the Export-Import Bank was formally signed on May 10, 1973.

Facilities and Equipment. KEDI's broadcast system is comprised of a transmission site and a production and broadcast studio. The production and broadcast studies are located in the KEDI headquarters facility near Seoul. Construction on these facilities was completed in 1975. The transmitting system's main site was near Jecheon, in the North Chung Chong Province. Construction on this faculty was completed in 1976.

The T-COM transmitting system made use of a helium filled tethered balloon flying at an altitude of 10,000 ft. to which transmitters are affixed. It was originally planned that KEDI's ITV and IR programs would originate at the main studios near Seoul, be relayed to the T-COM transmitters near Jecheon on a C band microwave link and be retransmitted to television and radio receivers in school classrooms. Two UHF channels were established for ITV and one FM channel for radio broadcast. The first phase of the development plan called for two-thirds of the South Korean land area to be under KEDI's broadcast coverage. The second phase of development called for a second T-COM site to be established near the tip of South Korea. With the two sites, KEDI could cover all of South Korea with educational radio and television programs. The broadcast signal over a 60 mile radius from the transmitting sites was to have been an FCC grade A signal and an FCC grade B signal over a 90 mile radius from the transmitter. The television channels were to operate with an effective radiated power of 10,000 watts. After a few trial broadcasts in late 1975, insurmountable technical problems with the transmitting facilities were encountered and the system was declared unworkable in 1977. The second transmitter site was never developed and now plans are being made to develop a ground-based transmission system.

KEDI's broadcast studio near Seoul includes two large, highly developed three camera color television studios and two well developed radio studios, one for voice recordings and one for dramatic production. While some of the support services such as graphic illustration, animation, motion film, and photographics are not well developed, the television and radio studios have all of the highly sophisticated electronic equipment and hardware necessary for top quality studio productions. (See the Appendix for a listing of radio and television equipment.) Full scale production originally was expected to result in 1,800 ITV programs per year. When full scale production is made operational, the support services. unless improved, will be inadequate. Currently existing physical facilities and equipment in such areas as graphic illustration, photographic production, and animation will not be able to support the full capacity for television program production that the studios are capable of. Facilities for set design and construction, make-up, and costume production are adequate, but will be strained to the limit in a full production schedule.

Organization and Structure. While several reorganizations have occurred, the Department of Educational Broadcasting is basically comprised of five major sections: (1) programming, (2) television program production, (3) radio program production, (4) engineering, and (5) administration.

The programming section is responsible for planning and producing all programs, planning any staff training to be undertaken either at home or abroad, and researching, developing,and producing the wide assortment of broadcasting materials found necessary.

The television and radio production sections, so-called software sections, are responsible for the production of all of the educational broadcast programs. The producers in the production section and the researchers in the research and development department must work closely with each other in the development of program scripts.

The engineering section is the hardware section and on its staff are the engineers and technicians whose duty it is to manage, to operate, and coordinate the activities in the master and subcontrol rooms. Also, this section is to coordinate the technical aspects of the transmitting activities. In addition, it is responsible for the installation, maintenance, repair, and testing of all of the equipment used for broadcasting.

The administrative section is responsible for overall coordination and supervision of the Educational Broadcasting Department. Currently, there are some 108 full-time employees in the department with an appropriate number of part-time employees available for special assignments. The full number currently is considerably lower than the total number of positions available in the department. This is due to several vacancies that have occurred and have not been filled. It seems that they will not be filled until such time as adequate salaries and personnel benefits can be given. (See Appendix for a list of employees of the department and related information.)

D. Implementation Activities and Outcomes

A Broadcast Council is established and maintained to review and evaluate instructional television programs and instructional radio programs prior to their being aired. In addition, the Broadcast Council establishes criteria for production and program quality, conducts research related to ITV and IR effect on learning, and solicits feedback from users in the field.

Because of the problems with the transmission of programs, the Broadcast Council and its work is still in its infancy. Until programs are broadcast generally, there is no feedback from clients as to the receptivity of the programs. Therefore, there can be only internal review of program quality. One of the major functions of the Council is to determine the effect of television and radio on learning. Until the programs are aired and received in the classroom by students and teachers, there can be no research on their effectiveness. From the data collected by the Council, more realistic long and short range plans can be made.

Identification of competent and qualified members for the Council, procedures for election of membership and officers, and tenure of office on the Council are all yet to be determined. As the transmission problems are solved, these areas will be dealt with and greater attention will need to be given to the recruitment of active field representatives.

Basic planning for television and radio program development is a cooperative activity between the Educational Broadcasting Department and the curriculum material specialists in the Research and Development Department.

In the initial stages of KEDI, the processes for the development of ITV and IR programs were somewhat cumbersome and disjointed. The scripts for the programs were developed by the curriculum material staff and the subject matter content specialist based on the Ministry of Education's curriculum. It was only upon completion of the script development process that the script was given to the broadcast staff for production. The production team did not have any opportunity to provide input under script development process prior to the finalized form of the script as determined by the curriculum material staff. Because of this, many times scripts had to be rewritten or totally redone.

This occurred because original scripts may have called for some activity that was very expensive or technically impossible. This would not be known until the formal and finalized script was given to the production staff. Then it would have to go back to the curriculum material staff and script writers for revision. This caused an undue delay in the production of the ITV and IR programs.

However, recently the process appears to be working more smoothly. This is, in part, due to the gaining of experience by the staff members in the two departments and to KEDI's assumption last year of the responsibility for textbook compilation for the Ministry of Education. This places KEDI's curriculum materials and subject matter content specialists at the forefront of knowing what form the curriculum may take in a given year, and this is vital information for the script writers and then in turn for the radio and television production staff. It is essential for the curriculum materials and subject matter content specialists and the production specialist to continue to develop closer working relationships on a daily basis as a matter of routine.

Open-air broadcasting activities to date have been limited primarily to radio programs except for selected educational television programs. KEDI develops and produces the radio programs and by contractual agreement, KBS transmits them according to a schedule established by KEDI in cooperation with KBS. A teacher's guide and schedule of radio program times for each semester is published and distributed by KEDI to accompany the radio programs. This book presents the radio program schedule by grades and subjects on a daily basis as well as objectives of the lessons and suggested additional activities the teacher may wish to assign.

One of the major drawbacks KEDI has experienced with this publication is that, due to financial constraints, only some 6,000 are published each semester and there are more than 6,000 elementary schools in Korea. This averages less than one book per school. It would be more effective if the book were put into the hands of every elementary school teacher each semester. It is designed as a teacher's guide and only one copy per school is not enough. The problem is compounded when one considers the number of middle schools in addition to the number of elementary schools. For a basic radio broadcasting schedule for the first semester of 1978, see Appendix. Radio programs are broadcast at the rate of 87 per week, including 21 of that number that are rebroadcast programs. Analysis of the programs indicate that on the average, per week (including rebroadcasts):

10 programs are on Moral Education for grades 1-6,
9 programs are on Korean Language for grades 2-6,
8 programs are on Social Studies for grades 3-6,
4 programs are on Korean History for grades 5-6,
10 programs are on Music for grades 1-6,
4 programs are Special Activities for grades 5-6,
6 programs are on English Conversation for middle school,
25 programs are supplemental in nature for all grades,
2 programs are for teachers and adults,
2 programs are cultural enrichment for elementary schools,
7 programs are for information, news and announcements.

Special programs are developed for special days such as Buddha's Birthday, Liberation Day, and national holidays. At the beginning of each semester, programs that introduce new textbooks and tell how to use radio in the classroom are broadcast for one week. The Appendix contains sample radio programs and their objectives for grades 4, 5, and 6 and such subjects as Moral Education, Korean Language, Music, and The Social Life.

For production purposes, KEDI budgets 10,000-20,000 Won per 15 minute radio program to cover direct cost. This cost on an average is divided as follows:

script 50%, talent 35.5%, and sound effects 14.5%. In 1977, the latest year with complete figures, KEDI produced 3,950 radio programs.

Due to T-COM's inability to transmit, television program broadcasts have not occurred. However, in anticipation of the time when a transmission facility will be available, the broadcast department continues to design and produce television programs. To date, some 1,591 television programs have been produced and are available for broadcast.

Table 1 presents the year, number of television programs, place of production, and color or black and white status of programs produced by KEDI.

Table 1

Year	1973	1974	1975	1976	1977	Total
#	11	19	23	419	1119	1591
Place of Production	KBS	KBS	KBS KEDI	KEDI	KEDI	
Color or B/W	B/W	B/W	Color & B/W	Color	Color	

The Appendix presents the television programs produced by KEDI in 1976-77 along with the intended audience, subject matter content, and grade level.

E. Transmission

A major component in the implementation of KEDI's new instructional model was the capacity for the broadcast of ITV and IR programs. A formal proposal for the transmission of these educational programs was made by the T-COM

Corporation of Westinghouse. In December, 1972, an agreement was signed with the Ministry of Education and T-COM, and the construction and the development of the multipurpose tethered satellite system for the broadcast of both radio and television programs for instructional and educational purposes as well as for other government communication purposes was begun. The site selected for this physical facility was near Jecheon, in the North Chong Chung Province. With the decision made concerning the transmission technology, KEDI intensified its efforts in the development of both radio and television programs for use during the experimental and demonstration stages of the E-M Project.

Delays were encountered by T-COM during the period of construction, and it became necessary for KEDI to make drastic changes in its plans for the delivery of radio and television programs in the small scale tryouts. More serious problems related directly to the transmission of programs arose later that made it impossible to utilize television broadcast in either the small scale tryouts or in the large comprehensive demonstrations. Engineering problems, delays, and the inability of T-COM to keep its promise of being an all-weather system made open-air broadcasting impossible. Therefore, KEDI was forced to reduce its plans for radio and television and had to rely upon a small portable closed circuit television set-up for its ITV lessons.

This was a major change for KEDI in that appropriate equipment and hardware for portability had to be purchased and competent operators had to be trained. This took time and diverted needed manpower from other projects as well as severely reducing the number of schools and classes that could be involved in the testing of the total KEDI instructional model.

The inability of T-COM to achieve the geographic land coverage that had been anticipated became apparent during this time, as well.

While alternative transmission systems are now being sought, the effect of the demise of T-COM was devastating. Internally, KEDI's staff and broadcast council has lost more than three years of broadcast experience. Classroom teachers now indicate, after having to fill classroom time that was dedicated to television programs with other learning activities, that it may not be necessary to have television and radio programs in the classroom in order to implement KEDI's new instructional model.

Outside of KEDI, the general public and the educationally minded public are not fully aware of the specific reason for the delay in transmission of television and radio programs for educational purposes. The coming of color television to Korea was to be brought by KEDI. Press releases and public pronouncements by government officials pointed to this being the first color television broadcast facility in Korea. Great expectations were formed based on these statements and now, today, some three years later, no color television program broadcast is occurring.

Through no fault of its own, KEDI, as the most visible entity, is suffering as a result of these delays and frustrated expectations. While KEDI's basic instructional mission is still intact, future efforts of KEDI will greatly be enhanced if the general public and the educationally minded public are given the facts in relation to the cause of the delay in transmission of color television programs.

F. Radio and Television in the E-M Project

The importance of the E-M Project has previously been presented. KEDI's original testing and implementation plan for the new instructional model called for heavy reliance upon the utilization of television and radio. Due to technical problems with T-COM and the resulting delay in the transmission of programs lasting to the present time, KEDI was forced to make a major modification in the plan.

Because general transmission of programs was not possible, KEDI developed a limited closed circuit television system utilizing a VTR and television monitor. Whereas, the original plan called for a large number of students in numerous classrooms to receive the programs simultaneously via general broadcast and open-air transmission, the plan that actually came about with the small portable system saw only one or two classrooms receive the television programs simultaneously. This greatly jeopardized KEDI's attempt in conducting its massive research activities relating to the role of television and radio in the new instructional model.

However, to the best of its ability under the circumstances, KEDI continued to collect and analyze data on the role of radio and television and to produce television programs in preparation for the time when a transmission system would be available.

KEDI's instructional and learning materials for broadcasting are developed by a five step process: (1) study of the unit, (2) analysis of the unit, (3) design of learning conditions, (4) preparation of materials, and (5) evaluation of materials.

In the stage, study of the unit, the terminal objectives are defined and the subject matter content is identified. In the second stage, analysis of the unit, the learning elements such as facts, basic concepts, and principles are specified. The interrelationships of these learning elements are examined in order to identify the learning hierarchy. In the third stage, design of learning conditions, the instructional sequence is determined. Instructional objectives are determined in accordance with the KEDI instructional model, and then the most appropriate media for instruction are selected. In the fourth stage, preparation of materials, the teacher's guide, the student workbook, media materials, and other teacher-learning materials are prepared. In the final stage, the evaluation of materials, an evaluation plan and instrument are developed, and the process is tested with students to verify adequacy and instructional effectiveness.

This basic procedure was followed as materials were developed for the small scale tryouts and the large comprehensive demonstrations.

The First Small Scale Tryout. The first small scale tryout occurred from May 14, to July 5, 1973. Some 745 students in third and fifth grades from two elementary schools in Seoul were involved. The subject matter presented was in arithmetic (geometric figures, and division of numbers) and science (light and color and life-cycle of plants). The instructional materials included ITV. The ITV programs were designed to last 15-20 minutes each. The content to be covered and the orientation of the programs were discussed with subject matter specialists. The ITV script was written by the KEDI materials development team and then given to the ITV production department. The ITV production staff and the materials development team made whatever modifications in the scripts that were necessary and then produced the programs. Upon completion of the ITV program, the accuracy of the ITV program and its appropriateness in terms of the psychological characteristics of the students were evaluated by subject matter specialists and learning psychologists.

The ITV lessons on division of numbers and life-cycle of plants were presented to the third grade students. Geometric figures and light and color lessons were presented to the fifth grade students. In each science lesson ITV was used as a summarization activity, whereas, ITV was the major instructional delivery mode for the math lessons. An analysis of the results appears to be inclusive, even contradictory, as far as ITV is concerned. The achievement level of the third grade students taught math via ITV is 63.61%, which is considerably below the 70.01% in overall student achievement. However, the student achievement of the fifth grade students taught via television is 96.09%, which is considerably higher than the 92.08% in overall achievement.

The Second Small Scale Tryout. The second small scale tryout made use of a control group in its research design. Twelve second grade classes from three elementary schools (2 in Seoul and 1 in Inchon) were selected. There were 576 students in the control group and 906 in the experimental group.

The subject matter content included in this second small scale tryout was moral education, Korean language, and arithmetic. The ITV programs in moral education were developed to be used for communication. These included a story of a kind and generous policeman and the importance of keeping accurate time. The lessons in arithmetic and in Korean language were developed as the main instructional program via television. Each television program was designed to last for 15-20 minutes. Similar to the first small scale tryout, the accuracy of the program content and the appropriateness of the subject matter and its treatment in terms of the psychological characteristics of the students were evaluated by both subject matter specialists and learning psychologists before the program was played back to the students. No data on the effectiveness of ITV alone is available; however, results of all of the tests from the experimental group indicate that the new KEDI instructional materials (including ITV) as an aggregate are more effective in raising student achievement levels than the materials used by the control group. Indeed, there was a significant difference, at the .01 level, between the KEDI group and the control group in all three subjects and the average achievement score at the end of the tryout was 85 percent mastery or better for all three subject areas.

The Third Small Scale Tryout. The third small scale tryout occurred during October and November, 1974. Two groups of third graders from four elementary schools served as samples. One group of 690 students served as a control group and one group of 851 students served as an experimental group. The subject matter content areas presented this time were moral education, Korean language, arithmetic, social studies, sciences, physical education, music, and fine arts.

Instructional radio as well as ITV was used in this tryout in selected subject fields and the school time tables for each grade level were unified for ITV and IR programs in order to analyze the impact on the school schedule at large. Further it is noted that the IR and ITV lessons were the responsibility of teaching aides instead of teachers. This was done in order to access the feasibility of using aides instead of teachers in the new instructional system.

While the results from the third appeared to be very favorable to the KEDI instructional system, there are some concerns relating to ITV and IR that must be addressed by KEDI. Teachers seemed to lack understanding of the new instructional model, particularly, as their new role and the role of teacher aides related to the utilization of instructional television and instructional radio. Further, the limited number of television and radio receivers were a handicap to the classroom teacher participating in the study. These available had to be shared, and the process of sharing was quite cumbersome and disruptive to classroom routine.

Even with the inconvenience, the achievement level of the experimental group was significantly higher than the control group in all of the content areas.

The Fourth Small Scale Tryout. The fourth small scale tryout was conducted from May 6 through July 10, 1976, and covered all subjects for students and all of the fifth grade classes. A total of 1050 students participated. ITV was used to present 16 ITV lessons, and radio was used to present nine IR lessons. The ITV lessons were 15-20 minutes each. The ITV role was to present total teaching, selective teaching, and supplemental teaching. In the first role, ITV replaced the teacher in all instructional activities. In the second role, ITV was used only in those areas where learning could better be facilitated by television. In the third role, ITV was used for enriching experiences and providing motivation. KEDI's instructional model calls for selective use of the functions of television and radio.

The subject matter content covered, and the number of lessons given by ITV, were moral education-2, Korean language-3, social studies-2, Korean history-2, mathematics-4, and natural sciences-3.

Instructional radio was used in 9 lessons, lasting approximately 15 minutes each. The subject matter content and the number of lessons were moral education-5, Korean language-3, and social studies-1.

Research results of the fourth small scale tryout dealt primarily with teacher reactions and the researchers' observations. These are presented below.

Teachers' Reactions

1. The teachers wanted ITV and IR programs to be producted in music, fine arts, practical arts, and physical education.
2. A period of 15-20 minutes per program was regarded as most adequate.
3. The teachers lacked a clear understanding as to whether television would replace a teacher or a teacher would use it for supplemental instruction.

4. The instruction proceeded too fast in order to cover the content of each program within a given time.
5. Students were too busy keeping up with the progress of the instruction to dwell on or to react to questions or points of concern.
6. The contents of programs were logically sequenced, but not motive enough for students to actively participate in the process.
7. Technical operation such as camera setup, recording, etc., was poor quality.
8. The teachers wanted to view programs prior to instructions or the program content in the teacher's guide was to be more specifically written.

Researchers' Observations and Analysis

KEDI researchers observed the use of 10 ITV programs and five IR programs. An analysis of their observation resulted in the following findings:

1. Sixty percent of each ITV and IR program was in conformity with the procedures set up by the teacher's guide.
2. It took 1 minute and 30 seconds in ITV and 2 minutes in the IR programs for student to give full attention to the programs.
3. Eighty-four percent of the students were paying full attention to the programs continuously.
4. It was not necessary for teachers to urge students to be attentive while a program was going on. The teacher's explanation, while a program was being played, appeared to hinder their learning.

5. Following the broadcast programs, the teachers had students answer the questions in the workbook after a brief summary of what was learned.
6. The ITV and IR programs generally proceeded at an adequate speed, although it went a little too fast in the IR program for moral education and too slow in the ITV program for mathematics. The content dealt with in the ITV and IR programs was adequate.

Following the successful completion of the small scale tryouts, KEDI's implementation plan called for a series of larger and more comprehensive demonstrations of the new instructional model prior to nationwide implementation.

The First Comprehensive Demonstration. The First Comprehensive Demonstration was conducted from September, 1975 through February, 1976 for all subjects in the third and fifth grades of 14 demonstration schools and 127 cooperating schools, with a total sample of 51,217 students. Due to the lack of transmission capability from T-COM and because of the large size of the first comprehensive demonstration, ITV and IR were not used. The difference in academic achievement levels of the students was in favor of KEDI's instructional model.

The Second Comprehensive Demonstration. The Second Comprehensive Demonstration occurred from March, 1976 to February, 1977. This demonstration involved almost 100,000 students in grades 3, 4, and 5, with grade 4 as a new addition, in 161 schools. The students in the KEDI experimental school showed higher scholastic achievements than those students that were not in KEDI schools. Due to technical difficulties with the T-COM transmission system, no ITV was utilized in the second comprehensive demonstration. Based on a contractual agreement with the Korean Broadcasting Service, IR programs were broadcast via KBS transmission facilities. The IR program presented lessons in all subject matter content areas for students in the three grades. No research results on the effect of the IR programs are available because the research design did not single out the effect of IR as a research variable.

The Third Comprehensive Demonstration. The Third Comprehensive Demonstration was conducted from March 1, 1977, through February 28, 1978. There were 16 demonstrations and 164 cooperating schools participating in the demonstration with approximately 172,000 students in grades 3, 4, 5, and 6, with grade 6 as a new addition.

IR programs broadcast via KBS transmission facilities presented lessons in each subject matter content area on each grade level. Due to the continuing technical difficulties with the T-COM system, no ITV program open-air broadcasts were available. However, one school with a closed circuit TV capacity was selected to utilize ITV lessons produced by KEDI. Research results directly related to the effect of ITV and IR are unknown because the research design did not single out the effect of ITV and IR as a research variable.

The Fourth Comprehensive Demonstration. The Fourth Comprehensive Demonstration involved over 4,000 teachers and 241,000 students. A total of 246 schools were involved. Of this number, 18 were demonstration schools and 213 were cooperating schools. While IR was continued in general use overall, seven fifth grade classes in two schools used color ITV lessons via a portable closed circuit television system. Some 20 ITV programs ranging in length from 15-20 minutes were produced by KEDI and utilized in this demonstration. The subject matter content presented via ITV included moral education, Korean language, social studies, arithmetic, Korean history, science, physical education, music, fine arts, and vocational education. Considerable attention was given to studying the effect of ITV in the demonstration. Two kinds of data were sought, the effect of ITV on achievement levels and on student attitudes. Pre- and post-tests were given. The demonstration was to be completed in February, 1979. Thus, no conclusive data were available at the time of the team visit.

The First Small Scale Tryout in a Middle School. The main purpose of this small scale tryout conducted during September and October of 1976 was to determine the effectiveness of KEDI's new instructional model in a middle school. One of the specific concerns was KEDI's instructional materials including radio and television programs for the middle school.

For this tryout, the first year students in two middle schools were used. One middle school, Shin Cheun, was in Seoul and the other, a public girls' school, Sang Incheon, was in Gyunggi-Do. The tryout involved 1,770 students in 26 classes of English and Science.

The experimental design of testing the KEDI model called for an experimental group and a control group. The experimental group was given a pre-test, the experimental treatment, and a post-test. The control group was given the pre-test, was taught by the previously existing and continuing Korean educational system, and then given a post-test.

English and science were the subjects taught via television and radio with eight of the 26 classes receiving television and IR lessons. These eight classes studied four ITV lessons and two lessons in English as well as two ITV lessons and one IR lesson in science. The school in Seoul had color television programs while the school in Gynaggi-Do had black and white television programs.

The experimental design was to test the effectiveness of the KEDI print and non-print instructional materials. Therefore, one group was given printed materials with ITV and IR and another group was given only printed materials. These two groups were then compared with equivalent groups in other schools that did not have the KEDI materials. Results showed that the higher achievement scores were obtained by the students in the KEDI schools. Within the KEDI schools, higher achievement scores were obtained by students taught by ITV and IR. The ITV and IR programs were particularly significant in raising the listening scores in English.

G. Television and Radio in KEDI's Special Programs

In addition to the E-M Project, radio and television have been used in such special projects as the Air and Correspondence High School, the Sinahn County Broadcast District, In-Service Teacher Training, Saemaul Movement , and Non-Formal Education.

Air and Correspondence High School. In March 1974, a new educational program called The Air and Correspondence High School was introduced in Korea.

Social development and equality of opportunity are major developmental goals of the Korean government. In education, this has included the provision of a second opportunity for a secondary education for those who may have missed the existing high school education. Because of this objective, the Ministry of Education asked KEDI to plan, develop, and operate the necessary services for an Air and Correspondence High School. The responsibility for administration of this second educational opportunity is shared by the Ministry of Education, Regional Boards of Education, and KEDI.

KEDI plans, produces, and broadcasts the radio programs and develops course textbooks, materials, and tests. Because of the difficulty with T-COM the transmission of the radio lesson is by contract with KBS, MBC, and CBS. Regional Boards identify the local school centers, direct supervision, and assign students to the various schools. The Ministry of Education establishes basic policy and provide general supervision of the total effort.

A profile of the student population indicates that approximately 70% of the enrollees are working full- or part-time. They range in age from 16 to over 50, and pay tuition which varies in amount based on region. For example, in Seoul, the tuition is 30,000 Won per year, while in the smaller provinces and countryside, the tuition may be as little as 15,000 Won per year. Approximately 20 percent of the students currently enrolled in the ACHS are recent middle school graduates. The attrition rate in the ACHS remain at approximately 25-30 percent. Student requirements for the diploma and curricula offerings are basically the same as those in the regular Korean High School. A total of 204 units in 14 subjects is required.

Because the T-COM transmission facility was not operational, KEDI had to rely on commercial and government operated transmission facilities (KBS, MBC, CBS) for its radio program broadcast in the ACHS. Because of the existing broadcast load in these stations, KEDI's instructional programs were pushed to the two extremes of the broadcast schedule, early morning and late at night. For example, the broadcast schedule for the IR programs in the ACHS for the second semester in 1978 is as follows:

Grade Level	Region	Subjects	Time	Studio
High School Grade I	All Korea	All	5:00-5:30 AM	MBC
High School Grade II	Seoul & Vicinity	All	10:00-10:30 PM	KBS
	Taegu, Kueng Joo, Pusan, Chun Joo	All	11:00-11:30 PM	CBS
	Choon Chun and 8 other cities	All	5:30-6:00 AM	MBC
High School Grade III	Seoul & Vicinity	All	10:30-11:00 PM	KBS
	Chun Joo Kueng Joo	All	5:30-6:00 AM	CBS
	Taegu, Pusan	All	6:00-6:30 AM	CBS
	Choon Chun and 8 other cities	All	12:00-12:30 AM	MBC

These undesirable study hours most likely contribute to the attrition rate in the ACHS.

Currently, the following subjects are available for high school students via ACHS: national ethics, Korean language, mathematics, English, German, science, music, fine arts, physical education, geography, politics and economics, national history, world history, biology, general industry, general technology, Chinese language, and communications studies.

Internally at KEDI, the Air and Correspondence High School project is administered by the Research and Development Department and the Educational Broadcasting Department. The Research and Development Department is responsible for developing the subject matter content for the IR programs and the textbooks. This procedure provides for very close coordination between the subject matter content of the textbooks and the instructional radio programs. The Educational Broadcasting Department is responsible for program production and transmission of the radio programs. Both departments share in the writing and refining of radio programs scripts.

A committee of educational broadcast teachers from KEDI and chief instructors from the Air and Correspondence High School Centers oversee the general overall program planning and production. They meet periodically to review program effectiveness, feedback from students and teachers in the school centers, and make suggestions for future IR programs. From its beginning in 1974, the ACHS now offers IR programs for all three high school grades in all high school subject matter content areas.

There are approximately 22,000 students currently enrolled in the ACHS throughout Korea. Beginning in 1975, students were accepted into the ACHS program from throughout Korea and not just the Seoul and Pusan areas as had been done previously. Of the nearly 5,000 students registered four years ago in the Seoul and Pusan area, 2,900 graduated in 1976.

The method of instruction employed by the Air and Correspondence High School includes self directed study, radio instruction, school attendance every other Sunday, and examinations, testing, and evaluation periods. Because radio and correspondence education rely so much on self directed study, special textbooks (62 by 1977) had been prepared by KEDI in cooperation with subject matter content specialists and textbook writers. These textbooks are semiprogrammed, with the non-traditional high school student in mind. Because of their supplemental exercises, self evaluation tests, and additional information these textbooks are sought after by the regular high school students.

Radio instruction is given for 313 days per year covering two lessons a day with each lesson being about 15 minutes in length. Because of budget restraints, students have only one chance to hear the lesson. No rebroadcast is currently being done because of the cost factors involved. Students must make notes on the radio lesson,and at least five times in a semester these notes are reviewed by the teachers at the educational centers.

Students come to designated school buildings every other Sunday and receive face-to-face instruction by the teacher for a total of 26 days per semester. The average Sunday session is 7 class periods of regular classroom instruction. This face-to-face instruction by the teacher is designed for content that is considered too difficult to be understood through the self study activities or the radio lectures. The Air and Correspondence High School uses Sunday for its more formal class since the existing high schools are vacant, and the students are generally employed during the week and have only Sundays free for school attendance.

As a part of the ongoing class assignments, students are required to submit reports for correction and evaluation by their teachers. The papers are either delivered personally to this teacher during the Sunday classes or are mailed directly. In addition to correspondence related to the ongoing assignments, each student is allowed two items per semester of personal correspondence directly to the teacher. This is in order for the teachers to help a student with any particular individual learning problem which may not be addressed during the bi-monthly classes at the education centers.

General problems that typically accommodate distant learning projects such as this one are the lack of liveness of the broadcast programs and the inability of students to stay on schedule. KEDI's effort to solve these problems was to institute attendance at the school centers, and this seems to have gone a long way in alleviating the problem.

240

Sinahn County Broadcast District. The Sinahn District is unique in several ways. It consists of over 700 islands off the Southern Coast of South Korea. There are severe transportation and communication problems with over 40 percent of the islands, because they are out of reach by regular ferry. Some islands are not inhabited on a regular and consistent basis. Educational opportunities do not reach many of the Sinahn District's population. School management is left to the discretion of the individual schools when they are in session. Other problems include limited opportunities for social and cultural contacts and low quality teacher preparation. In order to help bring about equal educational opportunities for the residents of the Sinahn District, an educational FM radio broadcast station was authorized on October 2, 1973, to broadcast during the hours from 8:00 am to 7:00 pm. The facility became operational on September 27, 1974. The physical facilities consist of the main studio and a transmitting station. In the main studio facility, there are two studios, two control rooms, a music performance room, an administrative office, and a storeroom. Equipment consists of three RCA radio consoles, nine RCA microphones, four turntables, five Ampex tape recorders, four AKAI tape recorders, and one transmitter.

The transmitter coverage area currently covers 62 primary schools, 60 branch schools, and 13 middle schools. There are 465 radios available for use which is an average of less than four radio sets per school.

The Sinahn Broadcast District employs 23 persons and is organized with two administrators, one senior supervisor, eight supervisors, one engineer, one assistant engineer, two announcers, four special effects personnel, and one custodian. In the Appendix a weekly radio broadcast program for the Sinahn Distirct is given.

KEDI's major objectives in this special program are:

1. To maximize the outcomes of instructional learning activities through the utilization of modern technological advances.
2. To provide up-to-date information on educational innovation and to help the teachers improve their professional competencies.
3. To help administrators and supervisors establish relevant policies and guides.
4. To expand the opportunity for social education designed for the out-of-school youths and adults.

There are four major areas of broadcast effort:

1. Administrative programs--dissemination of administrative orders and information to schools,
2. Supervisory/training programs--improving the quality of teachers,
3. Instructional programs--to increase the effectiveness of classroom learning,
4. Saemaul programs--to disseminate information about successful Saemaul communities.

KEDI's role in relation to the Sinahn Broadcast District is expected to expand. Currently, KEDI is developing approximately 40 percent of the Sinahn District's radio programs.

In-service Teacher Education. In-service teacher training is in great demand in Korea at the present time. With the rapid change in educational theories and teaching techniques, it goes without saying that the existing teacher in-service training program is inadequate to bring teachers up to date on the new changes. So the teachers can keep abreast of new educational theories and practice, the in-service teacher training program produced by

KEDI attempts to provide a variety of educational programs, to upgrade teachers skills and competencies by utilizing the uniqueness and merits of the broadcasting media.

IR is used for in-service teacher training on a scheduled basis for 15 minutes per day for 22 weeks during the school year and twice weekly during vacations. The lessons are designed to present new and relevant information to classroom teachers on such topics as current problems in Korean education, the future of Korea, new educational systems for Koreans, educational models, instructional objectives, and procedures to develop materials. To date, other than incidental direct feedback, there has been little or no research on the effectiveness of this effort.

As attempts continue to overcome the technical difficulties with the T-COM transmission system, KEDI has continued to produce radio programs for in-service teacher education. While a number of television programs designed for in-service teacher education have been produced to date, their relative affectiveness has not been established because of the transmission problems. Of particular note is a program entitled An Introduction to Educational Technology which was designed to help teachers utilizing the radio, television, and audio-visual materials in the classroom. For the ITV programs produced for in-service education during 1976 and 1977, see Appendix.

Social Education. KEDI's ITV and IR role in the new community movement has yet to be established. Due to the transmission problem, very little has been done in the broad and general areas of social education. While KEDI continued to develop and record television and radio programs in this area, until a viable transmission is established, little can be tried or tested. No television programs have been aired and the specific use of radio for this purpose has been meager. This general area is perhaps one of the areas in which television and radio will make its greatest contribution in Korea.

H. Plan for the Future

Because of T-COM's failure, the E-M Project and its new instructional model were never tested in entirety. Instructional radio and ITV were integral parts of the procedure for accomplishing the educational objectives of the E-M Project. With their absence, it was not possible to fully implement the testing and the trial-and-error phase of the new instructional model during the small scale tryouts and the large comprehensive demonstrations. It now appears that a role different from direct classroom instruction will be implemented for KEDI's radio and television. The design appears to be for television and radio now to be used primarily as an effort of general education for the public at large. While television and radio in relation to schools will still be curriculum related, they will not now be used as the primary teacher for selected subject matter content presentation in the instructional unit as previously thought. A graphic illustration of KEDI's policy in relation to the future of radio and television was adopted as a working draft in February 1978, and appears in the Appendix.

In addition to the direct effect on the E-M Project and the role of ITV and IR, T-COM's failure has also had rather far reaching effects on the attitudes and opinions of the general public and individuals interested in education. Somewhat negative reactions have been prompted because of KEDI's not broadcasting color television programs as had been announced publicly. While the fault for the failure was not with KEDI, nevertheless, KEDI was the institution associated with color television broadcast in the minds of the general public. Hopefully, with the development of a new transmission system, and the subsequent broadcast of top quality color television programs, KEDI will remove the stigma that is now attached to it. Plans are now underway to construct a ground based transmission system that will reach into every major city in Korea, covering 80% of the total population by 1980. For more information concerning the ground based system, see Appendix.

It now appears that this ground based transmission system will be in conjunction with KBS and its existing facilities. This relationship is yet to be determined. While certain political, financial, and administrative problems exist, it appears that it could be mutually satisfactory for KEDI and KBS to develop an agreement. For example, KEDI has color television production capabilities, KBS does not. KBS has a transmission capability, and KEDI does not. It could be to the advantage of each, if an agreement is reached. The problems that exist include such things as control of program production, control of broadcast schedule, determination of what programs will or will not be aired, and equality in staff, salary, and benefits. Both KEDI and KBS are at work on recommendations for solutions to the problems.

KEDI's efforts to upgrade staff salary and benefits are to be commended. Recently, several qualified and competent key people in the broadcast department have left KEDI in favor of more lucrative positions in other institutions. If KEDI is to succeed in its broadcast effort, it must have qualified and competent staff members. If it is to succeed in finding and keeping qualified and competent personnel, it must be able to compete successfully for the best people, and to do this, it must be able to provide competitive salaries and personnel benefits. The continued loss of competent personnel will not serve KEDI's needs.

Two continuing concerns are the quality control of programs and the working relationship between the Educational Broadcasting Department and the Research and Development Department. KEDI has a well developed set of plans for preview and evaluation of television and radio programs when the transmission problems are solved and the programs go on the air. This includes a step-by-step process of screening the programs by the Broadcast Council and its committees previous to formal acceptance as being ready for broadcast. Continual review and monitoring of programs upon broadcast include the use of field representatives soliciting viewer reaction and the review by an evaluation committee. This monitoring system is to be an ongoing one under the purview of the Broadcast Council. While the working relationship between the Educational Broadcasting Department and the Research and Development Department is much improved, the area of script writing still needs further improvement. The current procedure of joint development with the two departmental staffs reviewing each step as it progresses is time consuming and cumbersome and will not withstand the pressure of full-scale television and radio productions.

I. Evaluations and Recommendations

KEDI has not been able to test its new instructional model as it was originally planned. This plan called for the development of an extensive array of teaching and learning resources including print and broadcast materials. The development of these learning resources was to follow a well designed step-by-step process with small scale tryouts, increasing to large comprehensive demonstrations, and then to nationwide adoption and implementation.

Because of T-COM's failure to transmit, this never happened. The radio and television programs were not tested as the plan called for. The utilization of radio and television for the primary teaching role, the selective teaching role, and the supplementary role as KEDI envisioned was not possible. How radio and television can serve Korean education best in these capacities remains unanswered. Also unanswered is the question of the financial efficacy of radio and television as a primary teaching method. KEDI's plan was to use teacher aides with radio and television as the primary teacher and large classes of students in order to hold down the cost of education. Whether this is a realistic expectation remains unknown.

The original role of television and radio in Korean education, as planned by KEDI with the E-M Project, appears to be changing. The shift seems to be in the direction of using radio and television for general education purposes and directly relating it to the school curriculum in general rather than to specific instructional objectives in the classrooms.

In addition to the devastating programmatic effect T-COM's failure had on the E-M Project, it cost the KEDI broadcasting staff three years of experience with designing, developing, producing, and broadcasting educational radio and television programs. This time was critical.

With only a few rusty places in the procedural machinery for developing and producing quality radio and television programs, KEDI stands ready to go on the air with some very good and top quality programs when the transmission problem is solved. The procedural problems can only be fully known, understood, and solved as full-scale broadcast and transmission of programs are realized. While it is inconclusive, the research that was conducted on the limited use of instructional radio and instructional television show them to be a positive influence on student achievement levels and attitudes.

T-COM's failure can indeed be turned into a blessing. Because the other elements of KEDI's research and development plan for instructional materials did occur, and the research data for their effectiveness is known, it would now be possible to test the effectiveness of radio and television as it is added to the existing system.

Because the following recommendations are still appropriate, they will be presented here; even though some have appeared in other reports, letters, and conversations throughout the duration of this study.

1. Possibly the largest radio and television related problem outside the scope of the transmission problem is the internal operation relating to the production of KEDI's radio and television programs. Currently, the procedure for script writing, the passing of that script to the production staff, and the production of the program will be disfunctional under the high demand likely to be placed on the studio when full broadcast is possible. The presently existing informal system will work under the present conditions that are of relatively low demand. It will not, however, work when the demand increases as it is intended when the transmission problems are solved. It seems necessary that KEDI now establish a system for the logical and sequential flow of information and development of ITV and IR programs through the production phases. It is recommended that KEDI investigate and consider the possibility of an organization that places a chief director or senior producer or some other one person in charge of the complete unit of instruction if radio and/or television are to be used. It seems possible that a chief director or senior producer for each subject matter area could be assigned to head a team of subject matter specialists, a producer/director, a floor manager, the script writer, set designers, and other necessary personnel. This person's main job is, simply, to produce quality radio and television lessons by establishing and maintaining liaison with subject matter content

specialists on the problems and decisions that are academic and relate to instruction, and with the producer/director, camera men, graphic illustrators, makeup artists, set design specialists, and technical individuals for the problems and decisions that relate to technical production.

This chief director or senior producer of each team must also concern himself with the efficient utilization of the television studio. Decisions must be made on scheduling as much rehearsal, blocking, and memorizing lines outside the studio as possible. Therefore, when the production starts in the studio, the studio itself will be occupied for a minimum of time. Occupancy time in the studio is expensive and should be closely guarded. The organization concept put forward above is simply to bring about, in the appointment of one individual, the responsibility for television and radio program production. This person must see the "larger picture" in relation to seeking out answers and making decisions that relate to instruction and academe. In like fashion he/she must seek out and make decisions relating to the technical aspects of radio and television production.

2. A careful and intensive research effort relating to the effect of television and radio is an imperative task. Perhaps it should be specifically assigned to one or more researchers as a major task.
3. As KEDI's needs expand in the area of social education, Saemaul programs, parenting, and others, the need will arise for on-site and location type origination of programs. It is recommended

that KEDI pursue the possibility of utilizing 8mm film and/or battery operated portable VTR units for on-site video recordings. The existing facilities are for studio type programming and production.

4. Maintenance and repair of radio and television sets at the reception site may present a problem. It appears that repair of radios and black and white television sets can be handled with readily available and highly qualified Korean technicians. However, the repair and maintenance of color television sets may present a problem to the currently qualified Korean technician. Relatively few color television sets are in existence in Korea, and therefore technicians may not have had adequate training and preparation in the repair of color television sets.

5. KEDI's present illustrators appear to be talented and skilled in illustration techniques. Recognizing that graphic illustration, animation, and photography (including rapid development of negative film and slides) are major support services for television production, KEDI may have to employ additional illustrators, photographers, and lab technicians in the near future. Additional space and animation production hardware will be required very soon if KEDI is to realize the full potential of its television studio.

6. Of concern also is relevant, worthwhile "hands on" experience for the training of KEDI's engineers and technicians. A way must be provided to train KEDI's staff in English if KEDI staff are to come to the United States, Great Britain, or Australia for

study. While there are very good technical installations available for training, a large portion of the available training goes untapped if the persons undergoing training do not understand the language of instruction of the training site.

7. In addition to training programs for technical staff, advanced training would be most useful to producers, directors, and script writers.
8. A continuing concern is the development of improved external relationships, particularly those relationships that may be most useful in television and radio. Especially important are relationships with similar radio and television efforts at Seoul National University, EWHA Women's University, Yonsei University's A.V. Center, as well as other higher education institutions, and KBS, MBC, and CBS.
9. Specific attention must be given to overcome the negative attitude on the part of the general public and educational minded individuals caused by T-COM's failure.

CHAPTER VII

TEACHER EDUCATION

A. The Role of KEDI in Teacher Education

As a national center for research and development in education, KEDI early recognized a responsibility for the improvement of teacher education in Korea. In addition, it was clear that a comprehensive educational reform of considerable magnitude, such as that envisaged in the Elementary-Middle School Development Project, called for a heavy investment of time and resources in a carefully designed program of in-service teacher education. The emphasis of the reform movement on new materials, new and innovative instructional aystems, the use of radio and television, and a new school management system placed a high priority on comprehensive and continuing in-service teacher education that would upgrade teacher qualifications, that would prepare teachers to function in new ways in new educational settings, and that would engender in teachers enthusiasm and support for the new educational program. At the same time it was equally apparent that a new and improved system of pre-service teacher education was essential if new teachers entering the schools of Korea were to be both well-qualified and able to function effectively in the newly installed system of educational reform.

The intrinsic goals of the E-M Project, already described elsewhere in this volume, place strong emphasis on higher mental processes such as problem solving, critical thinking, and creative productivity; on the acquisition of values, attitudes, productive skills, and knowledge uniquely needed for national development; and on such matters as self-directed learning, individualized instruction, and the use of a wide and varied assortment of learning resources for both mastery and enrichment.

In order to achieve these goals, the KEDI instructional model provided for five stages in the teaching-learning task: planning, diagnosis, teaching-learning, extended learning, and evaluation. The implementation of this model called for a variety of teaching-learning resources: student learning guides, teacher guides, television and radio programs, other audio-visual materials, and test materials. In addition, changes in the school management system were imperative. The self-contained classroom required modification that placed emphasis on the function of each teacher as a member of an educational team. Special remedial programs had to be developed for slow learners. Techniques for individualization had to be developed and implemented. A set of educational goals and management objectives had to be established as a guide to managerial activities. The role of the master teacher was strengthened.

All this was in contrast to the then current system of teaching which placed strong reliance on lecture, reading, memorization, and recitation in large classes with relatively little opportunity for individualization or remedial efforts and which employed textbooks and occasional supplementary materials as the sole learning resources available to teachers and students. It was clear that teachers in the demonstration schools and cooperating schools, if they were to be effective in the development and implementation of the new KEDI instructional system, would require extensive and continuing in-service training. Similarly, new teachers entering the system, once the KEDI system was implemented nationwide, would need to have completed a system of teacher education compatible with the KEDI instructional system.

Thus KEDI, in its role as a catalyst for educational improvement and as an innovator in the development of a major program of educational reform, developed four major thrusts in teacher education: (1) basic improvement of the current national system of teacher pre-service and in-service teacher education, (2) development of a program of in-service teacher education for teachers involved in the comprehensive demonstration of the new educational system developed by KEDI, (3) preliminary activities related to a new pre-service teacher education system, (4) planning for the national pre-service and in-service teacher education program that would be necessary once the new system was established on a nationwide basis.

In efforts directed toward the completion of these tasks, KEDI has utilized not only its own expertise and resources but has called upon support and cooperation from a wide variety of other organizations and institutions: the Ministry of Education, universities and colleges of education, junior teachers colleges, provincial and city boards of education, administrators and teachers in the demonstration and cooperating schools, professional teacher organizations, and individual consultants. Through such cooperative efforts and with the mobilization of extensive resources, KEDI has made significant progress in the improvement of teacher education, especially in relationship to the development, adoption, and diffusion of a new educational system for Korea.

B. Basic Improvements in Teacher Education

KEDI, with a major responsibility for the improvement of education at all levels, realized the critical role that effective teaching plays in educational reform and in the delivery of quality education. Clear decisions were made to involve KEDI in research and policy studies aimed at the improvement of both pre-service and in-service teacher education.

Initially, two studies were undertaken on the initiative of KEDI administration and staff. One of these was a comprehensive survey of the literature relating

relating to teachers and teaching in Korea. Such a study, if was felt, would provide a foundation for further studies. A second study, also important as a basis for further research, dealt with the status and problems of elementary teacher education in the junior teachers colleges. Two additional studies were undertaken at the request of the Ministry of Education to strengthen its efforts directed toward the improvement of teacher education. One dealt with the development of a model for in-service teacher education, and the other was concerned with the improvement of the pre-service system of teacher education.

The study directed toward the development of an improved model for in-service education of primary and middle school teachers made a complete and comprehensive investigation of the problems of the present system of in-service education. It was found that specifications of the in-service programs for different educational positions were vague, outdated, and outmoded. On the basis of these findings and of the competencies required for different professional responsibilities, new guidelines were developed. Specific program content was developed for elementary school teachers, middle school teachers, principals, and vice-principals. New emphasis was placed on developing programs with appropriate sequence and continuity. Appropriate time allocations were devised to include three areas of study--professional education, general education, and major academic subjects.

Another study undertaken at the request of the Ministry of Education was focused on the improvement of elementary teacher education. General recommendations growing out of the study included an extension of the present two-year post-secondary program to one that was three to five years in length, an improvement of the program for practice teaching and intern teaching, the development of a statement of qualifications for entrance into the teaching profession, an integration of pre-service and in-service education, a control of teacher supply and demand, and a program that had validity in terms of the present situation in Korea.

Still another study, this one undertaken at the initiative of KEDI, dealt specifically with the knowledge and skills required of elementary school teachers in Korea. The study involved an intensive review of the international literature of teacher education; a comprehensive review of the present curriculum for elementary school teachers; and consultation with professors of the junior teachers colleges, with master teachers in the elementary schools, with administrators and supervisors from local school systems, and with professional teacher organizations. This study, in order to achieve its purpose, was centered on five task areas for the analysis of the professional functions and competencies necessary in a competent and qualified teacher: planning instruction, directing teaching - learning, evaluation of student achievement, counseling and guidance, and research.

Other studies and projects completed during the six years of KEDI's history relate directly or indirectly to the improvement of teaching and teacher education. These include teacher guides, courses of study, annotated bibliographies of teacher education literature, articles in journals and newsletters, guidelines for utilization of radio and television, and explanations of the new KEDI instructional system. While most of these studies and projects just mentioned were developed in connection with the E-M Project, nevertheless they have broad applicability to the improvement of teacher education and training.

KEDI has utilized the outcomes of these basic and applied studies in a number of in-service training programs--for instructional staff of the Air and

Correspondence High School, for teachers and teacher trainers in population education projects, for school principals, and for teachers in Pusan and Seoul. In addition, of course, there has been extensive in-service education in connection with the E-M Project for teachers and administrators in the provincial boards of education, and for staff members in the junior teachers colleges. These are described elsewhere in this chapter.

Recognizing the importance of continuous study of problems of critical importance, KEDI has identified a number of areas of concern toward which further efforts are to be directed. Among these are such problems as teacher supply and demand, recruitment of high-quality teacher education students, improvement of teacher education curricula, and expansion of in-service education for professional personnel at all levels.

Any evaluation of the efforts of KEDI in relationship to the improvement of teacher education for Korea must be positive. Studies that were undertaken were relevant to Korean educational problems and have the marks of quality research. Actual implementation of study outcomes have occurred in a positive and effective manner. Improvements have been achieved in both pre-service and in-service teacher education. Especially important in respect to KEDI's role in the educational reform goals of the E-M Project is the value and applicability of the knowledge gained and the experience attained for the development and implementation of specific plans related to the continued improvement of elementary and middle school education. However, critical to the ultimate success of improving teacher education and teaching is the expanding and strengthening of relationships and cooperation between KEDI on the one hand and the junior teachers' colleges and the public school on the other. Achievement of ultimate goals requires their participation.

C. In-service Teacher Education

An essential component of the E-M Project was the program of in-service education for teachers, supervisors, and administrators of the demonstration and cooperating schools involved in the experimental activities incident of the development and implementation of the new educational system. Two major objectives lay behind the program. The first of these was to develop knowledge and skill in the teachers participating in the truouts and demonstrations in regard to the KEDI educational system and the operating procedures of both the small-scale tryouts and comprehensive demonstrations. The other took the long-range view and was aimed at developing in the teachers and administrative and supervisory staff a potential for serving in leadership roles in introducing and implementing the new system on a nationwide basis.

Initial in-service education plans were formulated anf field tested in the demonstration schools during the four small-scale tryouts of the new educational system. This period of preliminary efforts gave an opportunity to develop various approaches, methods, and materials for in-service education and to experimentally determine their relative effectiveness. It was on the basis of the experience in the small-scale tryouts that an in-service model was developed for the comprehensive demonstrations and modified throughout the period of the demonstrations on the basis of experience and evaluation studies. The model that was developed over the period of several years of field work was well designed and carefully monitored and evaluated. In addition to KEDI staff, part-time consultants from higher education institutions, from provincial and district schools, and from the Ministry of Education were involved in both the planning and administration of the program. Although initially limitations in manpower and other resources existed, careful evaluations of the program brought additional funds and human resources to the program.

During the period in which four small-scale tryouts and four comprehensive demonstrations were conducted, significant improvement occurred, and the program was an effective instrument in the achievement of the E-M Project goals.

The In-service Education Model. The in-service education model developed in an evolutionary fashion from the initial in-service programs of the small-scale tryouts to the extensive programs of the four comprehensive demonstrations. As mentioned in an earlier paragraph, the purposes of the in-service program were: (1) to develop knowledge, skills, and understandings important to the operation of the new educational system, and (2) to develop among the participants the potential for serving in leadership roles in the expansion of the new system from a relatively small number of schools to all of the schools of the nation.

Program Content. The areas covered by the instructional program in several days of intensive group seminars as well as field supervision, follow-up, and group/individual consultation included the following topics: (1) the nature and role of KEDI in Korean education, (2) the Elementary-Middle School Development Project, (3) the role and importance of innovation in education, (4) the new instructional and school management systems, (5) the nature and purposes of the smallscale tryouts and comprehensive demonstrations, (6) the new instructional materials (student guides and workbooks, teacher guides, instructional television, instructional radio, evaluation materials, as well as research and studies published by KEDI), (7) subject matter subsystems and specific teaching methods in nine subject matter areas, (8) the specific utilization of radio and television in the instructional process, (9) the KEDI instructional model and mastery learning.

In-service Methodology. Methodology involved in the in-service program was actually an adaptation of the KEDI instructional model utilized in the E-M Project and included a five-stage teaching-learning process: planning, diagnosis, teaching-learning, extended learning, and evaluation. The use of this model not only provided an effective teaching-learning process but also served to acquaint participants with the model and to experience its operation and use in a group instructional setting. Preceding the instructional period, diagnostic texts were administered to aid the in-service staff in determining the areas of knowledge and skill which might require special attention and emphasis as well as those areas in which participants already possessed an adequate level of competence. The initial training program for the first comprehensive demonstration involved 30 hours of intensive training prior to the opening of school plus field follow-up. Later, on the basis of evaluation by KEDI staff and participants, this was increased to 60 hours in the second comprehensive demonstration. During the third and fourth comprehensive demonstrations, this figure was considerably reduced since almost all teachers in the experimental program had been trained previously and had had considerable experience with the new educational system. An important component of the in-service program was the follow-up on the job after the intensive training program sessions. KEDI staff went into the demonstration schools and observed teachers at work and followed this observation with group and/or individual consultation designed to resolve problems and improve instructional performance.

Other in-service training activities included (1) informal and formal interaction and professional discussion among the demonstration teachers within each demonstration school, (2) formal meetings conducted by KEDI senior researchers for master teachers and staff at the demonstration schools, (3) periodic meetings for master teachers from the demonstration schools at the KEDI headquarters, (4) conferences and seminars for provincial school administrators and supervisors. All these provided an important supplement to the actual in-service program specifically planned for the demonstration school staff.

Instructional Materials. Instructional materials for the in-service teacher education programs were developed over a period of several years during which the small-scale tryouts and the comprehensive demonstrations occurred. Materials developed originally were used experimentally, evaluated, and revised after each of the four tryouts and four demonstrations. The eventual outcome of this careful development of materials was the following set of core materials.

1. Basic guidelines for the operation of the new educational program.
   ... Characteristics of the program
   ... Program content
   ... Teacher-training materials
   ... Program operation
   ... Unit instructional planning
   ... Diagnosis and evaluation methodology.
2. Book I. Characteristics of the KEDI educational system. This volume deals with the following:
   ... The new educational system
   ... Objectives

... Planning instruction

... Principles of instruction

... Instructional media

... Diagnosis and teaching of disadvantaged students

... Formative evaluation

... Summative evaluation

3. Book II. Teacher guides for effective teaching. This volume includes the following:

... Teaching Korean language

... Teaching social studies

... Teaching mathematics

... Teaching science

4. Teacher guides for effective teaching. This volume includes the following:

... Teaching moral education

... Teaching physical education

... Teaching music

... Teaching fine arts

... Teaching industrial arts

5. Educational technology--a slide/tape program. This program, based on UNESCO's Introduction to Educational Technology, was developed because KEDI's new educational system makes maximum utilization of educational technology. The contents are organized under the following topics.

... The problems of elementary education in Korea

... Principles applicable to the learning process

... Selection of instructional media

... Development of the instructional system

... Systems approach to instruction

... Definition of educational technology

6. Instructional modules. In order to augment and improve the in-service teacher education program, 16 instructional modules were developed by KEDI staff with the consultation and assistance of professors in higher education institutions. These modules were for use in both demonstration and cooperating schools.

In addition to these core materials developed specifically for the in-service education program, other materials have been prepared which are available for use by teachers and other staff members on individual or group bases, and for use in general teacher training apart from the KEDI comprehensive demonstrations. Among these are the following:

1. Radio programs for teacher education. Each weekday 15-minute radio programs are broadcast with the intention of assisting teachers in service to improve their knowledge and teaching performance. These broadcasts cover a wide range of topics important to teachers. Included are the following topics:

... Educational foundations

    Educational innovation
    Educational innovation and systems development
    Modern educational theories
    Educational problems and research

... Subject matter

    Curriculum
    Teaching learning methods in each subject field
    Evaluation methodology in each subject field

- ... General studies
    - National outlook
    - The role of teachers
- ... Others
    - Consultations on educational problems
    - Case studies in educational innovation
    - Educational planning
    - Supervision

2. Television programs for teacher training. A large number of television programs for in-service training of teachers were also produced. Although the unavailability of KEDI's own broadcast system prevented wide use of these programs, they were still available on videotape and could be utilized in individual school settings provided equipment was available. Programs included presentation of the following topics:

    ... Trends and problems in Korean education
    ... Instructional designing
    ... The process of instruction and learning
    ... Diagnostic testing
    ... Teaching methodology in all subject fields

In addition, an extensive variety of other types of materials, although not specifically designed for use in the in-service programs in which KEDI was involved were available for use on individual or group bases. Among these were research reports, books related to teaching, materials developed for the population education program, curricular materials of the E-M Project, journal articles, newsletters focusing on the E-M Project and problems encountered by teachers in the demonstration schools, and radio and television program scripts.

Participants. Participants in the basic in-service teacher education program designed for the demonstration schools consisted of teachers whose classes were involved in the small-scale tryouts and/or the comprehensive demonstrations, master teachers, and principals from the demonstration schools, as well as supervisors, researchers, and other administrative staff from the provincial boards of education and district offices of education. Other volunteer participants included teachers and other staff members from cooperating and adjacent schools. The magnitude of in-service training can be shown from the activities related to the Second Comprehensive Demonstration. In preparation for the basic training program, a special in-service program was offered to 305 teachers under an authorization by the Ministry of Education. Following this program, a total of 292 persons were enrolled in the basic 60-hour course. In addition, two intensive training sessions and four field supervisions including group/individual consultation were offered to 1,500 volunteer participants interested in the new KEDI educational system. Further, four field supervisions with group/individual consultation were provided to 1,300 teachers of 144 cooperating schools. Although the basic training program of intensive seminar sessions and field supervision was aimed primarily at the staff of the demonstration schools, it is apparent that many other educational personnel were given opportunities to become acquainted with the KEDI instructional system and instructional materials. This type of in-service training served very effectively in disseminating information concerning the new system, in gaining support among the education profession, and in establishing the new system on a voluntary basis in the cooperating schools and in individual classrooms throughout Korea.

Teaching Staff. The teaching staff for the in-service education programs for demonstration school personnel were almost exclusively KEDI researchers. However, those chosen for these tasks were carefully selected, were individuals who had a deep involvement in the E-M Project, who were thoroughly familiar with all aspects of the small-scale tryouts and comprehensive demonstrations, who were expert in their knowledge of and skill in the KEDI instructional system. All were given special orientation and training for their task of conducting intensive seminars and of engaging in field follow-up and consultation with individuals and groups. In addition, it is important to point out that all participated regularly in special in-service seminars and other training programs were not necessarily focused on the in-service education task for demonstration school personnel, nevertheless much of the training was applicable and useful. For example, among the staff seminars held during a period of one year were such topics as: Effectiveness of the New Educational System and Its Feasibility, Conceptualization of Instruction, Curriculum Development at the Primary and Middle School Level, the Process of Attitudinal Change.

Evaluation. Evaluation of the in-service teacher education program was made through the use of pre-tests and post-tests dealing with cognitive information, through evaluations and recommendations of participants, and through continued observation and supervision of demonstration and cooperating school teachers in the field. The follow-up supervision was especially useful. While the primary purpose of follow-up supervision and consultation was the improvement of the performance of the teachers, valuable information was gained in terms of the effectiveness of the intensive seminars and the follow-up supervisory activities. KEDI staff utilized the results of participant evaluations, field observations, and their own experience in the in-service program to make continual modifications and improvement in both the methodology used and the instructional materials provided.

A Four-Year Sequential Development. Figure 1 provides a graphic description of the evolution of the in-service teacher education program over a four-year period of comprehensive demonstrations involving the E-M Project. The original program for the first comprehensive demonstration was developed on the basis of experience and evaluation during the previous four small-scale tryouts. However, it is important to note that after the completion of the first comprehensive demonstration, there was a considerable expansion and increasing specificity in the statement of purposes for in-service teacher education. Particularly important is the inclusion of the purpose of developing in teachers and others the capacity to serve in leadership roles in the eventual expansion of the KEDI program regionally and nationally.

Although the nature of the content remained basically the same over the four-year period, it became clear that during the second comprehensive demonstration, there was a need to increase the amount of time devoted to in-service education. This decision was the outcome of evaluations and recommendations from the teachers of the demonstration schools and of KEDI staff involved in the program. During the third and fourth comprehensive demonstration, it was possible to decrease the amount of time both in the intensive seminars and in the field supervision since the great majority of the teachers had already undergone extensive previous in-service training and had as well experience in the new system of education over a two-year period.

An important development in the instructional materials and therefore in the methodology was the production for the fourth comprehensive demonstration of a new set of materials: an operational guide, three volumes of training texts, special newsletters, an educational technology slide-tape program, and revised and improved teacher guides and student workbooks and other related materials.

Guidelines for Nationwide In-service Education. KEDI's activities in in-service teacher education formed a sound basis for the eventual implementation of in-service programs for all of Korea's elementary and middle school teachers. The task of actual implementation does not rest with KEDI but rather belongs to the Ministry of Education, to the provincial and city boards of education, to the junior teachers colleges, and to the university colleges of education. Decisions concerning the respective roles of each of these institutions and agencies rests with the Ministry. However, KEDI has demonstrated a process that works well, has developed materials and methodology that is efficient and effective, and has shown the value of a cooperative approach involving all interested and relevant groups. There is little doubt that the Ministry and other institutions and organizations entrusted with the national implementation of in-service education for a new system of elementary and middle school education look to KEDI for guidance and assistance in the massive task to be undertaken.

IN-SERVICE TEACHER EDUCATION: FOUR COMPREHENSIVE DEMONSTRATIONS
1975 - 1979

	FIRST COMPREHENSIVE DEMONSTRATION	SECOND COMPREHENSIVE DEMONSTRATION	THIRD COMPREHENSIVE DEMONSTRATION	FOURTH COMPREHENSIVE DEMONSTRATION
Purpose	To become knowledgeable concerning the new KEDI educational system, skilled in its implementation, and aware of the nature of the comprehensive demonstration and its operation	(1) To develop understanding and knowledge concerning the new KEDI educational system (2) To acquire skill in the utilization of the instructional system and the school management system (3) To develop an understanding of the nature and operation of the comprehensive demonstrations and skill in their implementation (4) To become aware of the importance of educational innovations and to develop a readiness to accept them (5) To develop in teachers, administrators, supervisors, and other educational personnel a potential and a capacity for serving in leadership roles in introducing and implementing the new educational system on a nationwide basis		
Content	(1) Concerns and problems in Korean education; the nature of the new KEDI educational system (13 hours) (2) Methods of instruction in subject areas (17 hours)	(1) Concerns and problems in Korean education; the nature of the new KEDI educational system--instruction and school management (30 hours) (2) Subject area curricula and teaching methodology--curricula, instructional system, teaching methods (30 hours)	(1) The nature of the new KEDI educational system--instruction and school management (12 hours) (2) Subject area curricula and teaching methodology (12 hours)	(1) The nature of the new KEDI educational system--instruction and school management (6 hours) (2) Subject area curricula and teaching methodology (8 hours)
Methods	(1) Five-day intensive seminar (2) Field supervision and consultation on group and/or individual basis (four occasions)	(1) Two two-day periods of intensive seminars (2) Field supervision and consultation on group and/or individual basis (four occasions)	(1) Two two-day periods of intensive seminars (2) Field supervision and consultation on group and/or individual basis (two occasions)	(1) One two-day period of intensive seminars (2) Field supervision and consultation on group and/or individual basis (two occasions)
Basic Instructional Materials	(1) Training textbook (2) Operational guide (3) Teacher guides (4) Student workbooks (5) Correspondence excerpts	(1) Training textbook (2) Operational guide (3) Teacher guides (4) Student workbooks (5) Field newsletters	(1) Training textbook (2) Operational guide (3) Teacher guides (4) Student workbooks (5) Field newsletters	(1) Training textbooks--Books I, II, III (2) Operational guide (3) Teacher guides (4) Student workbooks (5) Field newsletters

Notes: (1) Participants included teachers in demonstration schools, supervisors and administrators, and volunteers from cooperating and adjacent schools; (2) Selected KEDI professionals served as instructional staff; (3) Instruction occurred at each

D. Pre-service Teacher Education

From the outset KEDI was aware of the critical importance of the development of a program of pre-service teacher education that would adequately prepare a new generation of teachers for the elementary and middle schools to function effectively in the new system of education that was integral to the Elementary-Middle School Project. However, since the responsibility for the preparation of teachers for the elementary and middle schools was that of the junior teachers colleges and the university colleges of education respectively, it was clear that KEDI's role would need to be one of information, encouragement, and support to those institutions. This task was one which called for a high level of diplomacy and tact, the development of excellent cooperation and working relationships, and evidence of professional knowledge and skill that would have the respect of personnel in higher education institutions.

NOTE: At the time of the conclusion of the Analytical Case Study, KEDI was still involved in tasks relating to pre-service teacher education. Hence, this report can only describe the nature of KEDI activities in relationship to the development of a program of pre-service teacher education but cannot include any information concerning the final outcomes or the nature of the new pre-service program under consideration and development. An updating of KEDI activities and progress will appear in a later supplementary report.

Recognizing both the importance of a new program of teacher education and the delicacy of the role of KEDI in this task, from the outset KEDI administrators and staff began the development of cordial and cooperation relationships with appropriate educational institutions, agencies, and organizations. Representatives of universities and junior teachers colleges were asked to serve as consultants in a wide range of KEDI activities, including both the E-M Project itself and related in-service teacher education activities. Meetings and conferences were held with representatives of the Korean Federation of Education Associations to provide information concerning the goals of the new educational system of the E-M Project and the nature of the system itself, to solicit recommendations for its improvement, and to involve KFEA in long-range planning for implementation of the system and for the preparation of teachers for participation in its inauguration nationwide. Conferences and seminars were held with representatives of boards of education, administrators, supervisors, and researchers in all the provinces and major cities to acquaint them with the new system, with the new roles of teachers, and with the nature of the task of implementation.

Similar conferences and meetings were held with staff members of junior teachers colleges, with teachers and other staff members of individual schools, and of course with key individuals and bureaus of the Ministry of Education. All these activities were of considerable importance in making certain that appropriate individuals and groups were adequately informed concerning the nature of the new educational system, with the progress of the E-M Project, and with the nature and significance of new programs of pre-service and in-service education. At all times KEDI displayed an open attitude to comments, criticisms, and recommendations from professional colleagues throughout Korea.

As indicated earlier, it was decided by KEDI that there should be no effort unilaterally to develop a new program of pre-service teacher education. Such an effort would have appeared to usurp the role of legally constituted institutions and organizations and would have created antagonisms and animosities that would have made implementation of the new system regionally or nationally especially difficult. Rather, KEDI chose to serve in a cooperating and helping role, offering support and assistance, enlisting the participation of relevant individuals and institutions, providing useful research data, and generally serving in the role of a catalytic agent. Thus, KEDI did not alone develop a pre-service teacher education model. However, it did work cooperatively with others, including junior teachers colleges, the universities, the Ministry of Education, and others in the development of such a model. KEDI provided much of the background data and research findings for this model and gave continuing support to those who had a major responsibility for teacher education. Described in the paragraphs that follow are selected KEDI activities which were important in the development of a new program of pre-service teacher education.

Basic Studies in Teacher Education. Already described in this chapter, these basic studies provided useful background information for the review of current pre-service teacher education models and for the development of a new model that would be relevant to Korean needs. Particularly useful were such research reports as: Current Status and Problems in Teacher Education for Korean Elementary Schools (1973); Perceptual Orientation of Teachers and Students in Teacher-Training Institutions (1973); Preliminary Study on Curriculum for Teacher Education (1976); A Study of the Primary School Teacher-Training System (1975); Draft of Teacher-Training Programs (1975);

and Teacher Education--An Annotated Bibliography (1973). In addition to these and other specific studies, a large number of KEDI publications and reports dealing with the E-M Project, teacher guides and student guides, reports dealing with the use of educational technology, curricular documents in the various subject matter fields, newsletters, and journals provided information and data relevant to the consideration of a new teacher education program.

Conferences, Workshops, Seminars, and Institutes. Throughout its brief history, KEDI, within the limitations imposed by its resources, placed a high priority on activities designed for the dissemination of information to its clientele--teacher educators, administrators and teachers at all levels of the educational system, officials of the Ministry of Education and other government offices, and the general public. KEDI viewed all of these, comprising in fact the totality of Korea, as its target for information. Several selected activities of this nature are briefly described below.

1. Seminar on pre-service teacher education. This seminar which focused on pre-service education of teachers included participants from KEDI, from junior teachers colleges, from the Ministry of Education, and from KFEA. Its recommendations dealt with (a) need for a study of the curriculum of the junior teachers colleges and a revision of the curriculum based on the study outcomes, (b) involvement of professors from the junior teachers colleges in research activities at KEDI, (c) utilization of the laboratory schools of the junior teachers colleges as demonstration schools in the E-M Project, (d) an increase in the length of training programs of the junior teachers colleges focused on improving the quality of graduates, (e) immediate changes in teacher preparation curricula in anticipation of national implementation.

2. Seminar on the new educational system. This two-day seminar, intended to develop an improved understanding of the new educational system and to strengthen the network of demonstration and cooperating schools, was attended by chief administrators of elementary education in the provincial and city boards of education, principals of experimental schools, supervisors, and curriculum researchers of the Ministry of Education. The seminar highlighted the experiences of principals of three experimental elementary schools and the chief administrator of one provincial board of education. The seminar leaders pointed out the effectiveness of the new system in increasing student achievement and in improving goal-oriented school management.
3. Lectures to teacher education staff members. Lectures were presented throughout Korea to a total of more than 3,000 teachers by teacher training institution faculty. Lectures dealt with a description of the new educational system and how reference to it could be included in the elementary teacher education curriculum. In addition to the lectures, approximately 4,000 booklets describing the system were distributed for use by both teacher education faculty and by students planning to enter the teaching profession.
4. Research seminars. Periodically, KEDI held research seminars open to professionals from the Ministry, from universities, from junior teachers colleges from boards of education, and to other interested individuals and groups. Many of these seminars focused on the new educational system of the E-M Project and its operation,

its outcomes, and proposed future development. Directly and indirectly, attention was given to pre-service and in-service teacher education.

5. International seminars. Although not directly specifically to participation by a large number of Korean educators, the international seminars which brought to Korea outstanding educators from other Asian countries and more distant nations, were important in highlighting the educational reform endeavors of KEDI and the new roles for teachers.

Publications. Publications have been a significant aspect of KEDI's efforts to develop an understanding of and a readiness for the reform of pre-service teacher education. These publications were widely distributed to professionals involved in education throughout Korea as well as to professional educators in other countries. Books, research reports, curriculum documents, bibliographies, special materials developed for in-service teacher education, radio and television scripts and tapes, descriptions of E-M Project programs and outcomes, newsletters, and journals have been a major source of information concerning KEDI activities and achievements. To a very considerable degree, these publications have provided basic information concerning the role of KEDI, the importance and nature of educational reform, the role of innovation in such reform, the purpose and nature of the E-M Project, and approaches to teaching and school management. Many have dealt directly or indirectly with the preparation of teachers. All have been useful in developing a better understanding of teachers in Korea and directions for change and improvement.

Korean Evaluation Team. An evaluating team composed of 13 professors from prestigious Korean universities made an intensive study of KEDI, of the validity of the E-M Project, and of its organization and operation. Although the specific purpose of the team study was to obtain expert opinions regarding the E-M Project and of KEDI generally, there was another important outcome. This was the involvement of an influential group of professors in a manner that enabled them to become intimately acquainted with KEDI, with its activities and accomplishments, with the nature and progress of the E-M Project, and with the quality of the KEDI staff. Thus, the evaluation was more than an assessment of KEDI; it was a most valuable means of getting the involvement and possible support of an important group of professionals and of disseminating information concerning KEDI to a number of leading universities. Indeed, the potential influence of the team members on future developments in teacher education was unquestionably of highest importance.

In-service Training for Materials Production. This project brought together with KEDI staff a total of 33 teachers and researchers from the provincial education centers to develop a capacity for the joint production of teaching-learning materials for the E-M Project. Through this program, it became possible for KEDI to enlist active participation in the development of instructional materials to be used in the demonstration and cooperating schools involved in the E-M Project. Although the training program was not focused specifically on pre-service teacher education, this effort had outcomes that affected attitudes and developed increased interest in new programs of in-service and pre-service teacher education. Those involved quickly became aware of the importance of new and different training for individuals who would be involved as teachers in the use of the new materials being developed.

Relationships with the KFEA. The development and maintenance of cooperative relationships with the Korean Federation of Education Associations was a vital aspect of KEDI's activities relative to the involvement of the education community in both in-service and pre-service education. Regular communications and a flow of information were maintained. Seminars hald specifically for KFEA representatives were concerned with such topics as an explanation of the E-M Project, the new educational system developed by KEDI, inquiry-learning, improvement of skill-learning, educational innovation, utilization of broadcast media in teaching, prediction of academic achievement, and results of the E-M Project tryouts and demonstrations. In addition, KEDI staff members appeared often on programs sponsored by KFEA, and KEDI information was published in KFEA publications. There was, largely because of these efforts of KEDI, a continuing interest in and support for the E-M Project by KFEA.

Cooperative Projects with Junior Teachers Colleges. KEDI developed two cooperative projects with junior teachers colleges, one in Seoul and one in Inchon, designed to develop curricular models that might be useful in the eventual plan for a nationwide revision of pre-service teacher education programs. These two projects are noteworthy in that they involve KEDI staff with knowledge and expertise in the new educational system and with considerable experience in an in-service teacher education program and the administrators and staff members of two important teacher education institutions. Although at the time of the completion of the Analytical Case Study, the outcomes of these two cooperative ventures were not complete, there was every indication that the joint venture of KEDI and two teacher education institutions would be a productive one, important to national implementation of the new educational system and the preparation of teachers competent to engage in a new educational venture.

E. A Proposed Plan for National Teacher Education

The task of developing and implementing a nationwide system of pre-service and in-service teacher education for the new educational system of the Elementary-Middle School Development Project is clearly recognized by KEDI as the direct responsibility of the Ministry of Education with major participation by the junior teachers colleges, [illegible] the university level colleges of education, the provincial and city boards of education, and the local schools. However, this recognition by KEDI of the primary role of other institutions and organizations does not preclude specific responsibilities and activities by KEDI in the process. Therefore, KEDI, at the time of this writing, had developed preliminary plans for national pre-service and in-service elementary teacher education. Since only the elementary phase of the E-M Project is near completion, similar plans will be developed for middle school teacher education.

The plan which is outlined in this section of the report is the outcome of KEDI studies and activities during the past six years of experimental work with the E-M Project and the related teacher training, of cooperative discussions with the Ministry of Education, with officers and members of the KFEA, with representatives of higher education institutions, with administrators and supervisors of the provincial and city boards of education and teachers and administrators in the demonstration and cooperating schools, and with numerous consultants. It represents a consensus of ideas from almost all the individuals and groups concerned with the education of teachers, pre-service and in-service. It is at this point only an outline that will in the months ahead be developed into a comprehensive and complete plan. However, it is important to indicate that the development of that plan will be chiefly the responsibility of the Ministry of Education with support and assistance from KEDI and with the participation of relevant institutions and organizations identified and selected by the Ministry of Education.

The Plan of Pre-service Teacher Education. The plan, as developed by KEDI for presentation to the Ministry of Education, includes the following elements:

1. Goals
    - a. To develop a knowledge and understanding of the KEDI instructional and school management systems
    - b. To develop skills in the utilization of KEDI teaching-learning materials
    - c. To have a comprehension of the elements of the new instructional program as a total system
2. Curriculum
    - a. The KEDI educational system model (instruction and school management)
    - b. Models of teaching in each of the subject-matter fields
    - c. Utilization of KEDI teaching-learning materials including the use of technology such as television, radio, and other audio-visual approaches
3. Procedures for Implementation
    - a. Administrative and/or legal action to include the KEDI educational system in the curricula of the junior teachers colleges

b. Development of training materials
    (1) Utilization of training texts, television and radio programs, and other print materials already developed and tested in the field by KEDI
    (2) Appropriate modifications of these KEDI materials by Ministry of Education and/or junior teachers colleges
    (3) Inclusion of KEDI theory and practice in KEDI system in the textbook to be developed by the Teachers College Professors Association

c. Development of training-resource persons
    (1) Workshops/seminars held by KEDI for selected personnel from junior teachers colleges to be prepared as teacher-training experts
    (2) Workshops/seminars in each teacher education institution under direction of individuals prepared by KEDI as teacher training experts in KEDI system

4. Implementation
    a. Student participation in studies relating to theory and practice behind the KEDI system and system models
    b. Practicums (practice teaching) provided for all students in the utilization of the KEDI system and the KEDI materials

5. Evaluation
    a. Continuous evaluation of the new curriculum
    b. Modification/improvement based on evaluation studies

The Plan of In-service Teacher Education. A plan for in-service education of the many thousands of teachers in the elementary schools of Korea, developed for presentation to the Ministry of Education, is outlined below.

1. Goals
    a. To develop in elementary teachers of Korea a knowledge and understanding of the KEDI instructional and school management systems
    b. To develop skills in the utilization of KEDI teaching-learning materials
    c. To have a comprehension of the elements of the new instructional program as a total system
2. Curriculum
    a. The KEDI educational system model (instruction and school management)
    b. Models of teaching in each of the subject-matter fields
    c. Utilization of KEDI teaching-learning materials including the use of technology such as television, radio, and other audio-visual approaches
3. Procedures for Implementation
    a. Administrative actions by Ministry of Education
        (1) Setting a time schedule for regional and national implementation of the KEDI educational system
        (2) Administrative and legal action relative to inclusion of KEDI system in central and local teacher training institutes
        (3) Provisions of adequate financial support for the publication and distribution of teacher training materials for the new KEDI system

    - (4) Appointment of appropriate number of supervisors at the provincial, city, and country levels to assume responsibility for the implementation of the KEDI system in the schools
  - b. Tasks for KEDI
    - (1) Development of teacher education materials
      - (a) Utilization of materials already developed for use in training teachers in demonstration and cooperating schools
      - (b) Modification/improvement of materials by KEDI staff on basis of experience in national training programs
    - (2) Training workshops and institutes for the following
      - (a) Personnel of in-service teacher training institutes who will be assigned to KEDI program
      - (b) Supervisors in provincial and local school central offices who will be assigned task of implementation of KEDI educational system
      - (c) Teachers and administrators in the KEDI demonstration schools

4. Implementation and Supervision
  - a. Utilization of personnel trained in special workshops and institutes in massive task of training all teachers in Korean elementary schools
  - b. Major responsibility for training assigned to local school supervisory personnel and to teachers in the demonstration schools

    c. Specific responsibility for in-service training and follow-up assigned to each elementary school principal

5. Evaluation
    a. Continuous evaluation of in-service program
    b. Modification/improvement based on evaluation studies

It is important to note that inherent in the KEDI proposal for both pre-service teacher education and in-service teacher education is the involvement under the direction of the Ministry of Education of all institutions, organizations, and agencies concerned with the education of teachers. Thus, the plans call for involvement in both planning and implementation of the new teacher-education program in the junior teachers colleges, the university colleges of education, in-service training institutes, provincial and local school systems, and the staffs of the demonstration school as well as other relevant groups and individuals. It was clear to KEDI, in its experience of six years in the development of a new educational system and the preparation of teachers to work in the system on a experimental basis, that such total involvement was an important key to success. Although no decisions have been reached, it can be safely assumed that the Ministry of Education will follow KEDI's example in such cooperative approaches to the preparation of teachers for a new educational venture.

F. Constraints Encountered by KEDI

It was not unexpected that KEDI would encounter constraints that would hinder and adversely affect its efforts to modify and improve teacher education in Korea. As in all efforts to make significant changes in a profession, the strength of history and tradition, the roles and authority of institutions and groups, the inadequacies of the past, and the nature and amount of necessary resources all offered obstacles which KEDI had to face and to resolve. In the paragraphs that follow, these constraints encountered in the course of KEDI's responsibility to develop a new system of teacher education that was compatible with and necessary to the new educational system of the E-M Project are categorized and summarized along with a description of the approaches used by KEDI in resolving and solving critical problems. The categories used in this discussion include: the educational setting, teacher education, authority/linkages/cooperation, professional recognition, and KEDI organization/resources/priorities.

The Educational Setting. The nature of the educational setting in which the E-M Project was initiated presented a number of problems that were critical obstacles to the project itself and to the necessary modifications in teacher education. Building facilities in which schools were housed were, for the most part, inadequate and overcrowded with few special facilities that might be considered essential to the development of a modern educational system. Classes in most schools were abnormally large, making difficult the utilization of small-group or individualized instruction. Classes contained the full range of students from those who were mentally or physically handicapped to the most brilliant intellectually, thus placing on teachers an almost impossible task of giving attention to individual differences.

Except for the textbook and some supplementary reading materials which students themselves had to purchase, there was little in terms of adequate teaching-learning resources. Student workbooks and teacher guides were almost non-existent. The curriculum, determined centrally for the entire nation by a bureau of the Ministry of Education, was fixed and relatively inflexible in terms of adaptation to regional and local needs and differences. Teaching was largely traditional in the sense that it included lecturing, reading of the textbook, memorization, and recitation with little concern for inquiry learning or encouragement of creativity.

There was a wide range of quality in the teaching staff with some teachers the product of earlier programs involving only secondary normal training and with others the product of the present two-year junior teachers colleges. In addition, a government regulations requiring a compulsory rotation of teachers from school to school every four years meant that many teachers were moved from a district shortly after they had become well acquainted with local needs and were beginning to become more effective in meeting those needs.

What may have appeared to many to be almost insuperable odds against success in bringing about a significant and marked improvement in teacher education did not deter KEDI in attacking the problem. It was clear that the first task was to make changes in the educational setting if changes in teacher education were to be possible and effective in the classroom. What KEDI did insofar as changes in the atmosphere and climate of education are concerned is well described in the chapter dealing with the E-M Project and is not repeated here. References to those changes and the manner in which they were effected will make clear the nature of KEDI efforts to improve the educational system and to create a situation in which a new system of teacher education could be effective. KEDI made a careful study of the educational needs of Korean and undertook the development of an educational system that would meet those needs. A system approach to teaching and learning was developed. A new instructional system was devised to replace the old traditional approaches to teaching. The new system was one which responded to the individual needs of students, placed emphasis on individual needs of students, placed emphasis on individual growth and development, encouraged inquiry learning, and focused on the creative abilities of students.

New materials of instruction were developed, student guides and workbooks were made available, and teacher guides were prepared. A major focus was on the continuing in-service improvement of teachers and teacher qualifications. Efforts were made to coordinate the work of the Textbook Compilation Bureau with KEDI responsibilities for modifying the curriculum materials. Eventually, many responsibilities of the Bureau were transferred to KEDI to make possible a single coordinated approach to improvement of the curriculum and the materials of teaching and learning. Increased emphasis was placed on utilization of the new technology--radio, television, and other audio-visual devices--to supplement and complement the work of the individual teacher.

To the extent possible changes were made in the physical setting, but, more importantly, the real changes were made in the educational setting itself--in the instructional system, in the school management system, in the curriculum and curriculum materials, as well as in the goals of education. These changes were a necessary factor in the eventual development of a new system of in-service and pre-service education that would make it possible for teachers, once trained, to be effective in achieving their goals and tasks.

Teacher Education. KEDI was faced initially, as pointed out earlier, with a wide range of competence among the teachers of the demonstration and cooperating schools involved in the E-M Project. This situation was a microcosm of the entire systems of elementary schools throughout Korea and therefore one that had to be faced in the development of plans for the establishment of a new system of education with teachers equipped to serve effectively in that system.

Teachers in the primary schools of the nation included many who had completed the minimum training of a secondary normal school. Some were products of a system in which even less preparation was provided. Still others, more recent entrants into the profession, were graduates of the newer junior teachers colleges initiated in Korea less than two decades ago. But, even this latter group had been prepared for an educational system that was now to be replaced by an entirely new approach to teaching and learning exemplified in the E-M Project. Further, materials available to teachers to assist them in their teaching responsibilities were few and inadequate. Equipment was short in most schools. The current system of in-service education, available only to a small percentage of Korean teachers in a given year, was outmoded and relatively far removed from the reality of the setting in which the schools operated.

Once the E-M Project has been designed and was underway, KEDI undertook the planning and implementation of new systems of in-service and pre-service education for teachers. KEDI approached the task methodically and carefully. Initially, studies were made of the status of teacher education in Korea, of its effectiveness, its inadequacies, and possible new directions. Studies were also undertaken concerning new and developing theories of learning and of the processes that would best bring about effective learning. The E-M Project was itself a product in part of such studies and set the stage for the new in-service and pre-service education that was the responsibility of KEDI. Early efforts occurred in the demonstration schools during the small scale-tryouts. Based on these experiences and their evaluation, improvements were made in the system as it progressed through four comprehensive demonstrations. KEDI developed a number of important techniques: intensive seminars, field supervision and follow-up, well-designed textbooks and related instructional materials, radio and television programs, and slide-tape presentations. Teachers were trained to know, understand, and use the new instructional system and school management system. They were given special instruction in the utilization of television and radio in the instructional program. In short, they were prepared to become effective in the new educational setting of the E-M Project.

On the basis of this experience in in-service teacher education, KEDI was prepared to develop, in cooperation with others, models for pre-service teacher education--a teacher education that would fact the realities of Korean life, that would relate to modern approaches to teaching and learning, and that would make possible effective use of the new technologies that could expand and enrich the experiences of children in the classroom. A new and increased emphasis was placed on the clinical preparation of prospective teachers. The new program was to be a blend of a new curriculum, new materials of instruction for the classroom, and new and more effective approaches to teaching and to school management.

Authority/Linkages/Cooperation. Apart from any technical difficulties that might be inherent in the development of a new system of teacher education, another problem was very real--the role that a new and yet untried educational research and development organization might play in a task that clearly and traditionally was the domain of other agencies and institutions including the Ministry of Education, the institutions of higher education, and the profession itself. It is important to point out that KEDI is only a quasi-governmental organization. Although a creation of the government and largely supported financially by the government, KEDI did not have the authority of a ministry of education or of a university or a college of education to prescribe and institute new programs, in-service or pre-service. These tasks clearly belonged to others. Yet, KEDI, in its responsibility for educational reform, did have a responsibility to do something about teacher education that was essential to the entire reform movement itself.

It was evident that KEDI, if it was to be successful, would need to develop linkages and cooperative relationships and undertakings aimed at a new system of teacher education. It was also evident that KEDI would need to enlist on a voluntary basis and with a full spirit of cooperation the resources of many organizations in this task.

Very early in the beginning efforts of in-service teacher education in both the small-scale tryouts and the comprehensive demonstrations, KEDI sought the participation and cooperation of consultants from the junior teachers colleges. A continuing series of communication efforts and cooperative ventures were instituted with the profession through the Korean Federation of Education Associations. Close working relationships were established with the boards of education of the provincial school systems, with local school administrators and teachers. At the Ministry of Education level, major efforts were made to relate to the various bureaus that had responsibility for teaching and teacher education.

Examples of such cooperation are numerous. Seminars and conferences were held throughout Korea with representative groups of individuals from provincial and county schools. Training sessions were conducted at the junior teachers colleges to acquaint staff members with the new KEDI educational system. KEDI officers and staff participated in professional seminars for the KFEA. Special in-service education programs were held for teachers and administrators in various location throughout Korea. Journals and newsletters were distributed widely to the profession. Continuous solicitation of ideas, suggestions, and ciritcisms was made to provide KEDI with the input and feedback necessary for the improvement of teacher education.

Thus KEDI, in spite of its lack of authority, did weld together a network of cooperating institutions and agencies and individuals that were a strong and effective force in both the development and acceptance of a new educational program for teachers.

Professional Recognition. KEDI was a newcomer to the educational scene. Established in 1972, it was junior to the various bureaus and offices in the Ministry of Education. It was most recent in the ranks of educational research and development organizations. It was untried in the field of teacher education. Although individually its leaders and key researchers were highly capable and recognized and respected, the institution as a whole was inexperienced and was entering into a role and a series of tasks that could be faced in the educational scene in Korea or elsewhere.

It was evident that KEDI, if it was to be accepted professionally in the field of teacher education, would need to establish itself, its professional competence, and its devotion to an almost impossible job. KEDI did exactly that. Initially, KEDI made certain that it brought into the leadership ranks professionals who had already demonstrated their competence as researchers, as scholars, and as teachers. At lower levels within the organization, every effort was made to develop a blend of researchers and practitioners that would bring to KEDI the skills and knowledge of research and the atmosphere of the classroom and the practicalities of teaching. As KEDI grew and required additional staff, an increasingly high level of competence was sought, and recruitment and selection procedures were made even more rigorous. Internal and external training programs were developed to add to the qualifications and competence of KEDI staff. Many were sent overseas for short-term courses and many others for advanced graduate degree programs. At home, seminars and other training programs including on-the-job training were instituted. To the interested observer, it was clear that KEDI was concerned about professional competence and that the competence of those who were a part of KEDI was constantly on the rise and that KEDI was developing an organization comparable to other long-established institutions and organizations of Korea.

Professional recognition came as well through the demonstrated success of KEDI in the innovational efforts of the E-M Project as well as of other projects assigned to KEDI by government officials. Seminars and conferences and publications, such as journals and newsletters, brought to the attention of the educational community information concerning the remarkable successes of KEDI undertakings. The outcomes of in-service teacher education efforts of KEDI in the demonstration and cooperating schools were marks of the teacher education capabilities of a relative newcomer to this field of professional activity. The close working relationships established by KEDI with other institutions and agencies brought professionals from these groups into close contact with KEDI staff. They had the opportunity first hand to observe the high level of professional expertise that was present in KEDI and how it was constantly augmented by new recruits as well as by special training programs for staff members. Consultants from junior teachers colleges and universities who came to work with KEDI staff on KEDI projects had the opportunity to gain an accurate picture of KEDI competence and KEDI accomplishments.

Although the failure of the T-COM technology was a severe setback and to some degree affected the professional credibility of KEDI, it was the strong professional efforts and accomplishments of KEDI in all other spheres of responsibility that offset the unfavorable publicity that resulted from the technical failures for which KEDI had no real responsibility. It did become clear to professional educators in higher education institutions, in the public schools, in the ministry and other government agencies that KEDI had a remarkable record of professional successes, that KEDI activities in the fields of instructional television and instructional radio were indications of real advances in a relatively new field of endeavor in Korea, and that the failure to present programs on the air was not the fault of KEDI.

All in all, the acceptance of KEDI as an equal with competence in educational reform and in teacher education came about through the demonstrated ability of a highly competent professional leadership and research and development staff, through a careful program of educational reform that produced demonstrable success, and through the efforts of KEDI to develop close cooperative working relationships with long-established organizations and institutions.

KEDI Organization/Resources/Priorities. In addition to the various external factors that presented problems to KEDI in the development of new approaches to teacher education, there were internal conditions that hindered achievement until KEDI recognized and modified their impact.

Initially, KEDI had within its organization two units dealing with teacher education. One was a research unit specifically assigned the task of engaging in basic studies in teacher education. The other was a unit within the E-M Project assigned the task of developing in-service education programs that would increase the capabilities of teachers in demonstration and cooperating schools to function effectively in the implementation of the E-M Project. It soon became clear that the existence of two units was an unnecessary duplication of effort, that there was not always coordination and joint utilization of the outcomes of both, and that a consolidation of the two units was important. This consolidation would result not only in a more effective use of resources but also would be more productive in terms of developing best approaches to teacher-education improvement.

A second problem related to the E-M Project itself and thus indirectly to teacher education as well. There was a lack of internal coordination of all elements and aspects of the project. Without this coordination, it became clear that outcomes in one area of the research and development effort were not always transmitted to other areas often concerned with similar or even identical problems. Further, frequently new developments in the E-M Project that might be useful in other KEDI areas of responsibility, such as Saemaul education or population education, were not always made available for possible application. As this became evident, KEDI management made significant changes in organization and structure that made possible immediate availability of knowledge from one project to another. Thus, the activities in teacher education profited since there were various efforts related to teacher education, new approaches to teaching and learning, new systems of school management, changes in academic subject matter curricula, new approaches to the Saemaul movement, the use of radio and television instruction, the air and correspondence high school, and the population education project. These and others all had relevance to one another and all had relevance to planned improvements in in-service and pre-service teacher education.

Still another problem was related to resources and priorities. In the first efforts at in-service teacher education, KEDI found it necessary to make limited allocations of staff time and other resources to the program. However, it was soon clear that the key role teacher education was to play in the success of the E-M Project and its implementation was paramount and required additional resources. Thus, KEDI made a new assessment of priorities in order to allocate increased amounts of personnel and material resources to teacher education. For example, the amount of time allocated for instruction of teachers in the E-M Project was doubled in the transition from the first comprehensive demonstration to the second comprehensive demonstration. At the same time KEDI, always faced with the need for additional resources in the face of the increasing number of tasks assigned in addition to the basic task of the E-M Project, developed more and more effective proposals for support from the government through its presentations to the Board of Directors of KEDI and to the Ministry of Education.

G. Teacher Education--A National Priority

A recent report on educational development in Korea made to the Regional Conference of Ministers of Education and Those Responsible for Economic Planning in Asia and Oceania stated:

301

> *The improvement of teacher quality remains an overriding concern. A variety of policy changes may be contemplated to improve the quality of teachers..It seems essential that educational investment be increased, concurrent with reform of the teacher education system as well as the provision of institutional measures to create a social climate conducive to the restoration of respect for teaching.*

This statement as well as others that have emerged in recent years point out the perceived importance among Korean leaders of the improvement of teaching and teacher education. At a time when the nation is approaching a nationwide implementation of educational reform in both the elementary schools and the middle schools, such a movement to modify traditional approaches to education and to improve the quality and effectiveness of teaching places an extraordinary high importance on the development of plans for new programs of in-service and pre-service teacher education.

It is not an exaggeration to state that one of the most critical elements in the development and implementation of a major educational reform is the quality of teaching and the ability of school personnel to develop the attitudes, understandings, and competencies needed for implementation. The success of such an effort requires a massive program of in-service education as well as a major revision of programs of pre-service education. In both efforts KEDI has given significant leadership in planning, in research, in development. However, the task is not solely the responsibility of KEDI. It is a national effort which reqiures the coordinated efforts of the Ministry of Education, of KEDI, of institutions of higher education, of the provincial and country school systems, and of the profession. It is imperative that the Ministry of Education make this responsibility a national priority; that the services and support of all relevant institutions, organizations, and individuals be enlisted; and that all work cooperatively under the appropriate direction and support of the Ministry of Education.

CHAPTER VIII

COST ANALYSIS OF THE ELEMENTARY-MIDDLE SCHOOL DEVELOPMENT PROJECT

A. The Cost Analysis Process

Data Source. Three main sources of data were used in this cost analysis. The main component is information gathered by the study team in its last visit to KEDI (data source referred to as KEDI). A second source of information is an earlier study of the E-M Project (prior to the construction of the broadcast facilities and the experience with the inoperable transmission system) conducted by Jamison, Klees, and Wells (1978). This study also provides an opportunity to compare estimated costs with actual costs incurred. The third data source is a study by Lee, Futagami, and Brathwaite (1978). While this is not a study of the E-M Project, the information on the radio component of the high school provides a point of comparison for the E-M Project.

Cost Analysis Principles. In this and the following sections a brief overview of cost analysis procedures is provided. A more detailed description may be found in Jamison, Klees, and Wells (1978) or Klees and Wells (1978).

Problems with inflation (see the GNP deflator in cost assumptions below) and differences among countries with respect to wage structures and prices of commodities lead one to emphasize resource utilization and allocation of personnel time as a first step in a cost analysis. The amount of money spent for a particular task in 1972 may differ from that in 1978 merely because of inflation rates between the two years. To an economist the issue of prime importance is the scarcity of resources (both personnel and physical) and the allocation of those resources to alternative investments or activities. The opportunity cost of a resource is the activity foregone when resources are allocated to some other activity. Under certain restrictive and unlikely assumptions (no buyer or seller has any power in the market place, perfect information is available and costless to all market participants, etc.) the social value of a resource in terms of foregone opportunities is represented by the price of the resource. Hence, while a stress on a numeration of resource use exists, cost analysis typically results in the application of resource prices to the physical listing of resources. To the extent possible in the following cost analysis an attempt is made to provide a listing of resources (the number and type of personnel by activity, a listing of equipment, and a description of buildings). With this resource listing it is easiest to understand what the investment in the E-M Project has required in Korea. Those who wish to duplicate or learn from KEDI's experience will benefit most from this aspect of the cost analysis.

The cost data applied to the resource listing will be based upon expenditures made for salaries, equipment, building construction, maintenance, and materials. From the economist's viewpoint this is an imperfect procedure as the social value of the investment is not truly captured by the particular expenditures made in any year of the project. The "cost" of the E-M Project may not be truly compared with the "cost" of some other investment as the prices for different resources are set under varying sets of circumstances, and the beneficiaries of the expenditures (those who receive the expenditures rather than those who benefit from the outputs of the investment) differ among investments. It may be as important to consider the expenditure recipients as to consider the "cost" of the alternative investments. This criterion for cost becomes particularly important when one alternative may involve the importance of commodities and create a foreign exchange problem even if the calculated cost appears lower. Obviously, any decision as to the value of an investment should consider the impacts or outputs of those investments as well as the costs.

Cost Definitions. In this section, definitions of costs are provided as an introduction to the interpretation of cost analysis procedures discussed in the following section.

Total Cost -- A sum of all expenditures for some particular activity of a project or the project in its entirety.

Average Cost -- A division of the total cost by some unit of measurement such as number of students or number of instructional hours.

Marginal Cost -- The expenditures for additional resources needed to implement a decision. Whereas, the average cost per student would be a division of the total costs by the total number of students, the marginal costs per student would be the costs incurred as a direct result of the addition of a student to the system.

Fixed Cost -- Those costs that do not change as a result of a change in some unit of measurement. For example, the costs of the production facility and equipment create a capacity for a certain number of program hours. These costs are fixed with respect to changes in the number of programming hours up to the facility capacity.

Variable Cost--Those costs that change as a result of some change in a unit of measurement. For example, the cost of teachers or printed instructional materials changes with the number of students.

Capital Cost -- Costs incurred for resources that have a useful life beyond one year (an arbitrary but commonly used time period) such as buildings and equipment.

Recurrent Cost -- Costs incurred for resources that have a useful life less than one year such as maintenance, power, and some printed materials. Salary expenses are considered a recurrent costs as the annual salary covers the services of an individual for a one year period.

Cost Analysis Procedures. As mentioned, the basic procedure for analysis is to list and describe resources (where possible) and then apply costs to these resources based on budget expenditures for each resource. However, there are many instances where resource listing is not available since there is more of a tendency to keep records according to budget expenditures rather than resource use,and budget categorizations differ among records and with the type of cost analysis desired. An attempt is made to categorize resource use and costs according to activities that result in some type of output such as printed materials, radio programs or television programs, or activities that have a specific importance such as system development or diffusion of innovations.

There are two basic types of cost methodologies that are useful to decision-makers: cost functions and a cost over time methodology. The cost function methodology is discussed first.

The simplest cost function may be stated as:

$$TC = F + V_S N_S$$

Where TC is total cost
F is fixed cost
V_S is variable cost per student
and N_S is the number of students

This basic cost function may be expanded to include other system parameters for which costs can vary such as number of programming hours and/or number of broadcast hours. The basic or expanded cost function provides the decision maker with information on changes in total costs as the system is expanded or contracted according to the specified system parameters. In the analysis of the E-M Project, number of students, number of classroom instruction hours, number of radio and television programming hours, and number of radio and television broadcast hours will be the system parameters of importance. The cost function equation will have the following form:

$$TC = F + V_S + V_{H_{RP}} N_{RP} + V_{H_{TP}} N_{TP} + V_{H_{RT}} N_{RT} + V_{H_{TT}} N_{TT} +$$
$$V_{HG} N_{HG} + V_{HW} N_{HW} + V_S N_S$$

where $V_{H_{RP}}$, $V_{H_{TP}}$, $V_{H_{RT}}$, and $V_{H_{TT}}$ are the variable costs per program, radio production, television production, radio transmission, and television transmission respectively, and V_{HG} and V_{HW} are the variable costs per hour of teacher guides and student workbooks respectively.

It should be noted that the equation is constructed to represent total costs for a single year of the project, and,as fixed costs or any variable cost may contain costs which are capital or recurrent,it is necessary to apply an annualization factor to the capital costs to place these costs in annual terms. For example, for variable costs per student, radio receivers would be a capital cost and teacher salaries a recurrent cost. The annualization factor is given by the following formula

$$a(r,n) = \frac{r(1+r)^n}{(1-r)^n - 1}$$

where $a(r,n)$ is an annualization factor,

r is an interest rate, and

n is the lifetime of the resource.

Annualization factors for several interest rates and years are provided in Table 1. For example, the annualization factor for a 10% interest rate and a five year life is .264. Hence, the annual capital cost for a radio receiver costing $50 and lasting five years is $13.20. If one ignored the annualization factor one would simply divide the capital expense by the equipment lifetime (equivalent to assuming an interest rate of 0%) and obtain an annual capital cost of $10. In most instances this is a mistake and an underestimation of costs. A positive interest rate is used to represent a social time preference for investments. Money received in the future is assumed to have less value than money received in the present (ignoring any effects of inflation). In some sense the interest rate represents an opportunity cost of foregone investments. The money spent on radio receivers for education may have been spent on other public or private sector investments which have some positive rate of return.

The cost function equation may be complicated further by including in the context of fixed or variable costs items for which specific decision can be made. For example, radio receivers are a variable capital cost dependent upon the number of students. However, decisions as to class size and number of classes per radio will affect the total number of radios. The variable cost for students would be given by:

$$V_N N = a_R(r,n_R)\ RC_R + C_{VN}N$$

where $a_R(r,n_R)$ is an annualization factor for radio receivers,

R is the number of radio receivers,

C_R is the cost of a radio receiver, and

C_{VN} is all other costs that vary with the number of students.

Table 1

Value of the Annualization Factor, a(r,n)

Years (n)	Interest Rate (r)				
	0%	5%	7.5%	10%	15%
1	1.000	1.050	1.075	1.100	1.150
2	.500	.537	.557	.576	.615
3	.333	.367	.385	.402	.438
4	.250	.282	.299	.315	.350
5	.200	.231	.247	.264	.298
6	.167	.197	.213	.230	.264
7	.143	.173	.189	.205	.240
8	.125	.155	.171	.187	.223
9	.111	.140	.157	.173	.210
10	.100	.130	.146	.162	.199
15	.067	.096	.113	.131	.171
20	.050	.080	.098	.117	.160
50	.020	.055	.077	.101	.150

The decisions on class size and number of classes per radio affect the number of radios, R. Therefore one would have:

$$R = \frac{N}{S_C R_C}$$

where S_C is the number of students per class, and

R_C is the number of classes per receiver.

With the cost function format the effect on costs of changes in decision variables may be quickly calculated. A large number of these decision variables may be incorporated in the cost function with consequent increases in the complexity of the cost function.

As technology projects (and for that matter other major new investments in education) are typically front loaded in terms of large expenditures in early years of the project for equipment and facilities with little or no utilization of the system, the cost function methodology is more limited in the application. Hence, a methodology is used that involves a tabular listing of real system resource costs in each year of the project. For each project year one lists all recurrent and capital costs incurred in that year, regardless of the particular financing mechanism used. Therefore, this procedure, though related to, is not a cash flow or budget analysis. Additionally, one lists costs on the basis of constant monetary terms to control for the effects of inflation, i.e. if a radio receiver costs $50 in 1978 it is assumed to cost $50 in the future regardless of predicted inflation rates. This procedure would not be satisfactory for a budget analysis as, if one needs to purchase receivers in the future, the effects of inflation must be predicted to determine future budget levels.

The same types of assumptions as used for cost functions regarding decision variables must be made to project future resource needs and costs. The number of years for which one projects costs may be arbitrarily determined. A critical decision for a project such as the E-M Project is to determine a rate of implementation to schools throughout the country. From 1972 - 1978 only small tryouts and large scale demonstration projects were used for printed materials. With no transmission capabilities for television, there has been virtually no implementation of television. While radio programs have been broadcast, only one teacher guide for radio for each school has been distributed, and there has been no effort to place radio receivers in schools. Therefore, there is very little information on utilization of radio programs. Accepting the reports on effectiveness for the E-M Project on written materials, there will probably be a countrywide implementation although the timing of this implementation for radio and television programs is even more uncertain. There are no available television transmission facilities because of the continuing failure of Westinghouse's T-COM system, and transmission time has been rented for radio broadcasts. However, a large scale implementation of these elements of the E-M Project must await the availability of transmission facilities and a testing of the effectiveness of programs.

In listing costs on a yearly basis one enters capital costs only in the year when the equipment is first used. For example, if radio receivers have a life of five years, one enters the cost of radio in the year of purchase and the year of replacement (five year intervals after the initial purchase). The pattern of equipment purchases will cause fluctuations in the total yearly costs. Given this table of the yearly flow of costs, one needs a means to summarize cost patterns to compare alternative investments and make decisions about future project plans. A useful procedure is to discount the costs, and, for example, the number of students to a present value figure. In analyzing the total flow of costs for the E-M Project, one would discount costs to 1972. If one were interested in the future of KEDI, costs beyond 1978 would be discounted to 1978, and all costs incurred prior to 1978 would be ignored as irrelevant to a decision in 1978, as past costs cannot be affected by present decisions.

The present value factor, PV(r,n), is dependent upon an interest rate, r, and the number of years, n, and is equal to $1/(1+r)^n$. Table 2 provides present value figures for several years and interest rates.

As a short example consider the following summary of information:

	Year 1	2	3	4	5
Total Costs (Million of $)	3	1	1	1	1
Number of Students	100	2,000	50,000	50,000	50,000

The information represents a situation in which a substantial investment in capital equipment occurs in the first year and students are gradually added to the system. To summarize the average cost per student over the entire five year period, one must sum the discounted value of total costs and divide by the sum of the discounted value of numbers of students according to the following formula:

Table 2

Value of the Present Value Factor PV(r,n)

Years (n)	Interest Rate			
	5%	7.5%	10%	15%
1	.9523	.9302	.9090	.8095
2	.9070	.8653	.8264	.7501
3	.8638	.8049	.7313	.6575
4	.8227	.7488	.6830	.5717
5	.7835	.6965	.6209	.4971
6	.7462	.6479	.5644	.4323
7	.7107	.6029	.5131	.3759
8	.6768	.5607	.4665	.3269
9	.6446	.5215	.4241	.2842
10	.6139	.4852	.3855	.2471
15	.4810	.3379	.2394	.1228
20	.3768	.2354	.1486	.0611
50	.0872	.0269	.0085	.0009

$$AC(ij) = \frac{\sum_{i=1}^{n} \frac{TC_i}{(1+r)^i}}{\sum_{i=1}^{n} \frac{N_i}{(1+r)^i}} \quad \text{or} \quad \frac{\sum_{i=1}^{n} PV(r,i)TC_i}{\sum_{i=1}^{n} PV(r,i)N_i}$$

where $AC(ij)$ is a summary measure for the average cost per student for each year from year i to year j,

TC_i is total cost in year i, and

N_i is the number of students in year i.

Applying the above formula to the data in the example, one has the following average cost per student for each of the five years (assuming an interest rate of 10%):

$$AC(1,5) = \frac{\sum_{i=1}^{5} PV(.10,i)TC_i}{\sum_{i=1}^{5} PV(.10,i)N_i} =$$

$$\frac{.909(3{,}000{,}000) + .8264(1{,}000{,}000) + .7313(1{,}000{,}000) + .6830(1{,}000{,}000) + .6209(1{,}000{,}000)}{.909(100) + .8264(2{,}000) + .7313(50{,}000) + .6830(50{,}000) + .6209(50{,}000)} = \frac{5{,}588{,}600}{103{,}503} = \$54.00$$

The average cost per student is $54 per year over the five years of the project. As one extends the analysis further into the future the costs would tend to drop if the number of students remains stable or increases and the total cost relationships do not shift. It one had used a basic cost function, $TC = F + V_N N$, the average costs would be understated (assuming a full utilization of 50,000 students, that the $3 million spent in year 1 is a fixed capital cost with a life of 5 years, $960,000 of the $1 million spent in year 2 is a fixed capital cost, and the $1 million spent in years 3, 4, 5 and $40,000 spend in year 2 are recurrent variable costs dependent upon the number of students, $20 per student). One would have TC = 3,960,000(.264) + 20N (.264 is the annualization factor for five years and 10%) or an average cost per student TC/N of $40.91. The cost function results in a lower cost than the cost-time methodology since the time pattern of expenditures and utilization is ignored in the simpler approach.

However, the cost function approach can be used an an approximation of the cost-time approach by constructing a cost function in which capital costs are annualized and the average number of students are used for the number of years analyzed. In the example there is an average of 30,420 students. Therefore, the average cost is $45.37 per student, slightly higher than the cost-time methodology. If one examined only the first four years of data, average costs per student would be $68.56 with the cost-time methodology, and $68.94 with the cost function. The differences in the example do not seem large enough to warrant concern. Given the uncertainty of information on the E-M Project it is probably reasonable to focus on the cost function approach. One will not expect the methods to differ much when average utilization figures are used as the cost function approach focuses on roughly stable utilization patterns, and the cost-time approach helps to show a pattern of average costs and the number of years over which a project must operate in order for average costs to reach a tolerable level. In any cost both approaches lead to a summary average cost for an average student load. However, for an analysis of a specific decision, marginal costs are much more important.

B. Cost Analysis of the Elementary-Middle School Development Project

Basic Assumptions and Limitations for the Cost Analysis. In the analysis that follows detailed costs and utilizations are listed for years 1972-1978 based upon project expenditures. These costs are divided into fixed and variable costs and described according to system parameters with which the costs vary. As one may speculate on a variety of implementation plans, a cost function with variable costs is calculated to indicate the potential impacts on costs of a variety of system expansions. Specific assumptions for system expansions are discussed in greater detail in the analysis. The cost-time methodology is not used as the errors in using the cost function approach are small, there is some degree of uncertainty in historical data, and a greater degree of uncertainty in cost and utilization projections. The uncertainty in historical data stems from the fact fact that information has been recorded in a variety of ways and places at KEDI, and detailed information was only available for some specific activities.

This cost analysis is based upon the economist's concept of cost, the opportunity cost of resources used, rather than the accountant's concept of cost, budget expenditures. For this reason, particular loan arrangements or interest payments are not relevant, as a financing system is a means of managing cash, not resources. Additionally, taxes or import duties for any resources are ignored as they do not represent a resource use but rather an internal flow of funds among government agencies. Exact budget expenditure in any one year are not relevant. In order to make costs comparable across years, as one is using cost data as an index to add a diverse set of resources, the effects of inflation must be eliminated. A $1.00 budget expenditure in 1972 would not have the same implication in terms of resource use as a $1.00 expenditure in 1978. Therefore, all cost information given in this analysis is expressed in 1978 United States dollars with an exchange rate of $1 = 480 Won. Using the GNP price deflator from Korean government figures for 1972 through 1977 and estimating a 13% increase in 1978 (the increase in 1977 was 12.8% and the government predicts an average inflation of 11.2% through 1982) one must use the following multipliers for costs in previous years:

Year	Price Multiplier
1972	2.54
1973	2.33
1974	1.83
1975	1.48
1976	1.28
1977	1.13
1978	1.00

These price multipliers are applied to all non-personnel costs. The 1978 salary schedule is used to calculate past salary costs when appropriate. Therefore, cost projections are in 1978 United States dollars. One would need to project future inflation rates to establish appropriate budget levels to purchase the necessary amount of resources.

Due to the inoperation of the aerostat transmitter system the costs are ignored. Jamison, Klees, and Wells (1978) give costs of $5,600,000 for the two aerostats, UHF TV transmitters, FM radio transmitters, command systems and other equipment and services. Construction costs for the aerostat sites were $7,000.000. Including these costs in the analysis would obviously raise total costs but it is preferable to ignore the costs since average cost per student or instructional hour would have been lower if the system had been operational. The aerostat system was a bad investment decision and has resulted in compensatory payment and transmitter equipment from Westinghouse. Therefore, rather than use costs of a non-functioning system the costs of the projected investment in transmission equipment will be used. Since the E-M Project has essentially operated as a non-technology project, costs are calculated with and without media. Cost projections for the E-M Project with media use are somewhat tentative as the use of media has switched from direct instruction to supplemental broadcast which may be directed at home viewing to a considerable degree as well as in school.

In this cost analysis the E-M Project is treated as an add-on to the regular school system. However, to the extent that E-M Project materials are a substitute for expenditures normally incurred in the school system, then it would be appropriate to compare total educational costs for the traditional school system with the cost of the educational system with E-M Project materials. Such a study was undertaken by KEDI in 1977 to compare the potential costs of expanding E-M Project materials to the entire school system with current educational costs. The study was conducted through a questionnaire to 20,000 students in E-M Project schools and regular schools. Students were asked to report their spending on several items including: tuition and fees, room and board, testing, commencement, classroom materials, textbook, extra textbook, supplies, tutoring, extra curricular activities (academic and athletic), transportation, and uniforms. Differences between E-M Project and regular students on four items as reported below:

(in 1,000,000 US dollars)

	Total	Extra Text	Supplies	Tutoring	Extra Curricular
Regular	452	97	84	206	65
KEDI-EM	372	82	82	165	43
Difference	80	15	2	41	22

The numbers above were calculated by multiplying total enrollments by the average expenditures reported by the students. Publication and distribution costs of E-M Project printed materials were added to the extra costs for E-M Project students. The average cost of these materials was $2.00 and was calculated by adding the cost of the student workbook to the cost of teacher guides divided by the average number of students in a class. Cost of KEDI facilities and staff for system development, materials, preparation, research, and other activities were not included as these are sunk costs and not relevant to the costs of expansion of already existing KEDI materials. However, materials have only been prepared for second through sixth grade students. Additionally, expansion of E-M Project materials requires teacher training and these costs were also excluded. An overall comparison for decision purposes should include these costs.

E-M Project Outputs. In calculating costs of a system one is interested in what has been obtained for the investment. Initially, consideration is given to system outputs to form a basis for variable costs. This section deals with direct system outputs: number of students served, number of instructional hours produced (printed materials, radio, and television) and number of teachers trained. Ultimately, to determine the value of the investment one should consider education effectiveness and social benefits (typically measured by future income of students). The outputs of the E-M Projects are listed in Table 3 for years 1973 through 1978 (no materials were produced in 1972). Several points of interest are worth noting in this table. The comprehensive demonstrations have involved the main educational impact and over the four demonstrations from 1975 through 1978 the number of students served has quadrupled from a total of 52,261 students in 1975 (11,198 students in demonstration schools, 41,063 in cooperating schools) to 240,981 students in 1978 (37,192 in demonstration schools, 193,789 in cooperating schools). However, the number of students served is less than 5% of the total elementary school enrollment (the project has never been oriented toward middle school students other than in initial plans). However, although only a small number of students have been served to date, an expansion to all schools would involve three major expenditures: student workbooks, teacher guides, and teacher training. Development work has already gone into workbooks and guides and the only cost would be that of printing. As mentioned, the cost of all materials is approximately $2.00 per student. Teacher training costs approximately $15.00 per teacher. Therfore, for the remaining 5 1/4 million students and 875,000 teachers the cost of reaching the entire elementary school population would be $23,625,000.

The comprehensive demonstrations have involved the utilization of a substantial amount of instructional hours. The number of hours of instruction in student workbooks produced was 468 in 1975, 934 in 1976, 502 in 1977,

Table 3

Outputs of E-M Project

Outputs	1972	1973	1974	1975	1976	1977	1978
Number of Students Served							
Small Scale Tryouts		1,651	851	1,050	1,770		
Comprehensive Demonstrations--Demonstration Schools				11,198	17,721	24,749	37,192
Comprehensive Demonstrations--Cooperating Schools				41,063	78,510	147,619	193,789
Number of Teachers Trained							
Small Scale Tryouts		36	10	14	26		
Comprehensive Demonstrations--Demonstration Schools				163	264	397	592
Comprehensive Demonstrations--Cooperating Schools				724	1,347	2,671	3,587
Broadcast Media							
Hours of TV Direct Instruction Produced[1]		11	19	23	228	152	
Hours of TV Supplement Programs Produced				2	197	967	814
Hours of Television Broadcast		4	19	16			20
Hours of Radio Direct Instruction Produced					157	162	
Hours of Radio Broadcast							2,610

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[1] Black and white programs in 1973, 1974, 1975; color programs in 1976, 1977, 1978.

Table 3 (cont.)

Outputs of E-H Project

Outputs	1972	1973	1974	1975	1976	1977	1978
Broadcast Media (cont.)							
Hours of Radio Supplement Produced			2,484	3,276	3,602	3,788	
Number of Students Receiving TV Programs		745	851	1,050			448
Print Materials							
Hours of New Instruction (Student Workbooks)[2]				468	934	502	418
Hours of Teacher Instruction (Teacher Guides)[2]				1,003	1,902	1,023	840
Number of Instructional Units				153	316	167	161
Diagnostic Tests				32	73	38	31
Formative Tests				89	179	90	62
Summative Tests				40	79	160	36

Hours of new instruction are the number of hours appearing in student workbooks and teacher guides for all grade levels (3 & 5 -- 1975; 3,4,5 -- 1976, 3,4,5,6 -- 1977; 2,3,4,5,6 -- 1977; 2,3,4,5,6 -- 1978). A more detailed breakdown is provided in Table IV.

and 418 in 1978. The number of hours produced of teacher instruction (teacher guides for classroom use) was 1003 in 1975, 1902 in 1976, 1023 in 1977, and 840 in 1978. These hours of material are divided by grade level in Table 4. In 1975 one semester of instruction was produced for third and fifth grades; in 1976 another semester was added for third and fifth grades and a full year for fourth grade; in 1977 a full year for sixth grade was produced; and in 1978 a full year for second grade was produced. This task has involved the virtual change of the entire curriculum in nine subject areas (moral, Korean language, social studies, mathematics, science, physical education, music, fine arts, and industrial arts) in five of the six elementary grades and represents a major output of the E-M Project.

The use of media, radio and television, stands in sharp contrast to this. Most of the television programs produced in the early years of the project (11 in 1973, 14 in 1974, 25 in 1975) were used in small scale tryouts and reached very few students (1651 in 1973, 851 in 1974, 1050 in 1975). These programs (20 minutes per program) were not broadcast as transmission facilities were not available, but rather used on video tape recorders. In the output table one can see the influence of the failure of the T-COM system on KEDI decision-making for the E-M Project. As the inability of Westinghouse to resolve transmission difficulties became more evident, television program production was reoriented from direct classroom instruction to supplemental instruction. The 11 programs and 19 programs of television produced in 1973 and 1974 respectively for the E-M Project were all for direct instruction. Of the 25 hours produced in 1975, 23 (92%) were for direct instruction. Of the 425 hours produced in 1976, 228 (54%) were for direct instruction. Of the 1,119 hours of instruction produced in 1977, only 152 (14%) were for direct instruction. All of the programs produced in 1978 are apparently for supplemental instruction. This shift was

Table 4

Hours of New Instruction By Grade Level

	1972	1973	1974	1975	1976	1977	1978
Grade 2							
New Hours of Instruction (Student Workbook)							418
New Hours of Instruction (Teacher Guides)							840
Grade 3							
New Hours of Instruction (Student Workbooks)				214	226		
New Hours of Instruction (Teacher Guides)				425	450		
Grade 4							
New Hours of Instruction (Student Workbooks)					478		
New Hours of Instruction (Teacher Guides)					980		
Grade 5							
New Hours of Instruction (Student Workbooks)				254	270		
New Hours of Instruction (Teacher Guides)				578	472		
Grade 6							
New Hours of Instruction (Student Workbooks)						502	
New Hours of Instruction (Teacher Guides)						1,023	

probably reinforced by the heavy reliance on printed materials in the comprehensive demonstrations and the rather substantial output of instruction hours that were not media based.

E-M Project Inputs. In costing an education project it is best to start with a listing of inputs (resources) for the project and then apply input prices to calculate project costs. The cost analysis that follows, however, relies more heavily on reported expenditures, adjusted for inflation, for the inputs. A complete listing of all inputs to the E-M Project is provided in Table 5. It is this table which may be more valuable than summary cost measures to those wishing to duplicate the E-M Project. Costs of inputs will vary from country to country but basic input needs will remain similar for similar project inputs. There are four main categories of project inputs: building, land, equipment, and personnel. An additional important input to the project are expenditures made for miscellaneous recurrent items such as travel, office supplies, telephone, postage, and printing. An attempt to list resource use for thse expenditure categories would be too cumbersome. All buildings, land, and equipment are listed in the year of acquisition.

The main KEDI campus consisting of a research building (8289 square meters), a broadcast building (3136 square meters), a guard room, and a watch tower were built on 53,680 square meters of land in 1974. Based on the substantial number of teachers to be trained to use E-M Project materials and a recognized need for continuing teacher education, it is contemplated that a 2,640 square meter facility will be built on 6,900 square meters of land in 1979.

There are seven equipment categories in the table: automobiles and trucks, office furniture, office equipment, measuring instruments, television equipment, radio equipment, and audio-visual equipment. A certain amount of grouping has

Table 5

Inputs to the E-M Project

	1972	1973	1974	1975	1976	1977	1978	1979
Buildings (in square meters)								
Research & Office Bldg.			8,289					
Broadcast Bldg.			3,136					
Guard Room			16					
Watch Tower			33					
Microwave Tower								
Teacher Training Center								2,640
Land (in square meters)								
KEDI Center			53,680					
Teacher Training Center								6,900
Equipment[1]								
Automobiles & Trucks			1	1	6	4	1	
Office Furniture								
Tables	64	81	111	126	89	45		
Chairs	121	112	149	177	102	63		
Files & Cabinets	35	68	69	33	57	39		
Book Cases	16	25	37	41	19	44		
Miscellaneous								
Office Equipment								
Copy Machines	3			1	1		1	
Typewriters	4	5	10		1	2	3	
Calculators		3	6	4	2	2		
Graphics Cutting Machine		1		1	3	3		
Telephones	8	61	19	43	21	6	9	
Measuring Instruments								
(clocks, stopwatches, etc.)	1	4	10	8	32	9	11	
Television Equipment								
TV Receivers		3	2	42			29	
Video Tape Recorders			1	6				
Portable Video Tape Recorders						2		
Telecine Chains				3				
Camera Control Unit				3		3		

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[1] Total amounts of equipment are listed and allocated on a cost basis to the E-M Project in the cost table based on total expenditures for the E-M Project versus other direct costs. Therefore, equipment allocated to the E-M Project would be 100% in 1972, 84% in 1973, 89% in 1974, 88% in 1975, 92% in 1976, 71% in 1977, 78% in 1978. All television, radio, and audio-visual equipment is allocated to the E-M Project.

Table 5

Inputs to the E-M Project

	1972	1973	1974	1975	1976	1977	1978	1979
Television Equipment (cont.)								
Lighting System				2				
Video Control Switcher				4				
Video Control System				1				
Studio Camera				4		2		
Audio Control				6				
Tape Recorder				6				
Turn-Table				6				
Video Monitor-25 inch color				4				
Video Monitor-17 inch color				10				
Video Monitor-12 inch color				1				
Video Monitor-14 inch B/W				17				
Vecterscope				2				
Waveform Monitor				12				
Distortion Analyzer				1				
Oscilloscope				2				
Audio Signal Generator				2				
Volt-Ohm-Meter				3				
Video Test Signal Generator				1				
Frequency Counter				1				
Decibel Meter				1				
Impedance Bridge				1				
Voltage Regulator				6				
Video Connector				1,000				
Video Cable (1000 feet)				5				
Audio Cable (1000 feet)				5				
Transmitter-30KW							1	
Transmitter-10KW							5	
Transmitter- 1KW							7	
Transmitter-100KW							30	
Radio Equipment								
Radio Receivers			5	7	2			
Audio Control Console				3				
Tape Recorder		3	5	5	13	4		
Turntable				6				
Microphone				36				
Transmitters-5KW							1	
Transmitters-3KW							12	
Transmitters-1KW							30	

Table 5 (cont.)

Inputs to the E-M Project

Audio Visual	1972	1973	1974	1975	1976	1977	1978	1979
Audio-Visual Equipment								
16mm Movie Cameras		4	1			1		
Slide Projector		1			1	3		
16mm, 8mm Projectors		1	1		1			
Screen		1	2					
16mm Film Processor						1		
Sound Disc						1,800		
Splicer		2		1	2	3		
Slide Copier		1						
Enlarger	1							
Personnel[2]								
System Demonstration					2	2	2	
System Development [3]		26	53	13	3	4	4	
Development of Materials				31	33	24	24	
Teacher Education					4	3	2	
Innovation of Diffusion				3	2	3	4	
System Evaluation	4			5	5	5	2	
Broadcasting-Planning, Administration & Research[4]	3	32	2	5	25	20	21	
Production (TV & Radio)			50	27	37	55	53	
Engineering				29	29	37	36	
Radio Transmission-5KW				–				9
Radio Transmission-3KW								84
Radio Transmission-1KW								150

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[2] The categories for personnel differed slightly between records listing number of personnel and records listing annual salary expenditures. However, an attempt was made to obtain a correspondence among categories.

[3] There was no breakdown of personnel for 1973 and 1974. Hence, all personnel were grouped in system development. However, a breakdown was provided in budget records.

[4] There was no breakdown of personnel for 1972 and 1973. However, a breakdown by category for 1973 was provided and included in the cost table.

taken place in this listing. For example, total numbers of chairs, tables, cabinets, copying machines, etc. have been listed rather than dividing the numbers by specific type of equipment (plastic chair, chair with arms, office chair, etc.). A complete subdivision would be too time consuming, probably add little to an understanding of the project, and was not available from KEDI records. Additionally, it was not possible to divide office furniture and equipment between the research and office building and the broadcast building. Therefore, in calculating costs with and without media, all office furniture and equipment are assumed to be needed without media, overstating the non-media costs.

As KEDI undertakes activities other than the E-M Project some allocation of equipment used by more than one project is necessary. As specific records were not kept it was assumed that automobiles and trucks, office furniture and equipment, and measuring instruments should be allocated to the E-M Project on a percentage basis according to the total direct expenditures. This allocation was made in the year of acquisition of the resource and is an imperfect measure. The percentages are 100% in 1972, 84% in 1973, 89% in 1974, 88% in 1975, 92% in 1976, 71% in 1977, and 78% in 1978. One should realize that any allocation of shared equipment will be somewhat arbitrary as opposed to having a detailed list of the specific use of each piece of equipment in each year of the project, a data need whose costs would probably far exceed any value to the information.

All television, radio, and audio-visual equipment are allocated to the E-M Project. In the case of radio equipment this will result in some of overstatement of E-M Project costs as the radio equipment is used for other purposes, specifically the Air and Correspondence High School. However, the small amount of space allocated to radio studios within the broadcast building and the relatively low cost of radio equipment compared with television and audio-visual equipment will not result in a very large addition to E-M Project costs.

One should also note that each equipment category has a line for miscellaneous items. These items are included in costs but not listed separately due to either a large diversity of items or a rather small cost.

Estimates were available for new transmission facilities for both radio and television and for annual operating costs (including personnel) of these facilities. However, there is no estimate for the number and type of resources needed for reception. If one considers that reception will involve the placement of radio and television receivers in classrooms and necessary maintenance, it is a relatively easy matter to cost these elements given assumptions regarding the number of receivers per classroom (or classrooms per receiver) and the number of students per class. The receivers listed in the table were not for classroom use.

One final note on equipment: there is no estimate given for equipment needs for the proposed teacher training facilities. Hence, costs that include future teacher training will be understated.

The personnel category provided the most problems in both resource listing and cost. A complete record was kept giving expenditures for each piece of equipment and each building. However, the records for number of people working contained slightly different categories of activity than records giving budget expenditures for salary. If one took the number of personnel and multiplied by the average salary, one would obtain very different values for personnel costs than that extracted from the budget records. The following technique has been adopted: Personnel are grouped according to categories given in budget records. Salary costs in the cost table are drawn from budget records. The personnel categories in the input table were constructed to correspond to the budget categories. The problem is compounded by the fact that many people have tasks in several of the activity classifications.

Table 6

Costs and Personnel Input to Teacher Training

	1972 1973	1974	1975	1976	1977	1978
Planning and Development						
Number of Person Days	40	20	50	60	40	45
Training Sessions-Planned						
Intensive Training						
Number of Person Days	24	8	60	240	240	90
Number of Sessions	4	2	4	32	32	18
Length of Session (Days)	1	1	3	2.5	2.5	2.5
Number of Researchers Per Session	6	4	5	3	3	2
Field Training--Demonstration Schools[1]						
Number of Person Days	92	16	252	320	160	144
Number of Sessions	26	16	42	64	32	36
Length of Session (Days)	1	1	3	2.5	2.5	2
Number of Researchers Per Session	4	1	2	2	2	2
Field Training--Cooperative Schools						
Number of Person Days			52	214	116	48
Number of Sessions			26	143	58	24
Length of Session (Days)			2	1.5	2	2
Number of Researchers Per Session			1	1	1	1
Training Sessions-Requested Demonstration Schools[2]						
Number of Person Days				48	88	180
Number of Sessions				8	22	60
Length of Session (Days)				3	2	3
Number of Researchers Per Session				2	2	1

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[1] Planned Field Training Sessions for 1973 and 1974 were not divided between demonstration and cooperating schools.

[2] Requested field training session for 1978 was not divided between demonstration and cooperating schools.

Table 6 (cont.)

Costs and Personnel Input to Teacher Training

	1972	1973	1974	1975	1976	1977	1978
Cooperating Schools							
Number of Person Days					48	110	
Number of Sessions					24	55	
Length of Session (Days)					2	2	
Number of Researchers Per Session					1	1	
Materials Development							
Training Textbook							
Number of Person Days				300	180	180	180
Number of Copies				700	3,000	3,500	
Manual of School Management							
Number of Person Days				150	180	180	
Number of Copies				700	3,000	3,500	
Training Material--Slides, Tapes, etc.							
Number of Person Days				150	90	900	
Costs (in 1978 U.S. $)							
Personnel							
Planning and Development		120	360	900	1,080	720	810
Training Sessions[3]		2,088	432	14,328	15,660	12,852	8,316
Materials Development				10,800	8,100	22,680	3,240
Travel Expense[4]		325	138	4,550	1,365	9,669	6,251
Materials Development-Non-Personnel				2,249	1,988	11,056	2,200
Total		3,133	930	32,827	28,193	56,977	20,817
Number of Teachers Trained		36	10	901	1,637	3,068	4,179

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[3] Average daily salary is $18 and is the 1978 average monthly salary for E-M Project staff divided by 22 days.

[4] Travel expense in 1973 and 1974 was mostly in the Seoul area. In other years sessions were held across the nation.

Table 7

Personnel Input for Instructional Materials

Type of Material	Personnel Time (Planning, Draft, Editing, Review)
Teacher Guides	1.7 Days per instructional hour
Teacher Guides	5 Days per instructional unit
Student Workbook	1 Day per instructional hour
Diagnostic Test	5.5 Days per test
Formative Test	8.5 Days per test
Summative Test	4.5 Days per test
ITV (20 minute programs)	
Script	7 Days per program
Teacher Guide	½ Day per program
Supplement	½ Day per program
IR (15 minute program)	
Script	5 Days per program
Teacher Guide	½ Day per program
Supplement	½ Day per program

As a check on the listing of personnel input one may examine two other tables that provide detailed listing of personnel inputs for specific activities. Table 6 gives a breakdown of personnel activities for all elements of teacher training including planning and development, training sessions, and materials development. Table 7 gives a breakdown of personnel input for development of instructional materials including teacher guides, student workbooks, test, and radio and television programs. The personnel input for radio and television programs does not include any production time but only the development of materials for the programs.

In the input table there is no listing of personnel time for teacher training in 1973, 1974, or 1975. However, the teacher training table does give personnel time for these years; small efforts in 1973 and 1974, and three full-time people in 1975 (excluding materials development). The number of personnel are similar for the two tables for 1976, 1977, and 1978.

In comparing personnel for materials development one can multiply the number of person days required for teacher guides, student workbooks, and tests as given in the table on instructional materials and multiply this by the number of materials produced in each year and compare these with the number of persons reported in the input table. These numbers are as follows:

Material	Input		Output in			
			1975	1976	1977	1978
Teacher Guides-- Instructional Hours	1.7 Days	X	1003	1902	1023	840
Teacher Guides-- Instructional Units	5 Days	X	153	316	167	161
Student Workbooks	1 Day	X	468	934	502	418
Diagnostic Test	5.5 Days	X	32	73	38	31
Formative Test	8.5 Days	X	89	179	90	62
Summative Test	4.5 Days	X	40	79	160	36
Total Full-Time People			16	31	18	14
Full-Time People (From Input Table V)			31	33	24	24

With the exception of 1976, there are rather large discrepancies in personnel time between the tables. These discrepancies may be due to an underestimate of time required for producing specific materials, or the inclusion of personnel in the input table who do not have direct tasks in material development but are nevertheless associated with this activity, or the inclusion of persons in the input table for materials development who spend only part-time in this activity and part-time in other activities.

The same problem of discrepancies among different records may be observed in radio and television production. Table 7 on personnel for instructional materials gives a personnel imput of 7 days for television scripts and 5 days for radio scripts. However, the estimate of recurrent costs for radio and television program production presented in Table 8 involves personnel inputs of only one day for each of these activities (approximately $18 per person per day).

From the information below one can see the differences among the tables:

	Output in							
	1975		1976		1977		1978	
	TV	Radio	TV	Radio	TV	Radio	TV	Radio
Table VII (Script support materials)								
TV 8 days X	25		420		1119		814	
Radio 6 days X		3276		3759		3950		2610
Table VIII (Script production, Talent)								
TV 17 days X	25		420		1119		814	
Radio 2 days X		3276		3759		3950		2610
Total Persons								
Table V (Production & Engineering)	56		66		92		89	
Table VII	76		100		126		85	
Table VIII	27		56		103		73	

Table 8

Recurrent Costs of Radio and TV Programs

	TV (20 minute program)	Radio (15 minute program)
Script	$ 18.45	$ 17.75
Talent Fee	$200.90	$ 12.60
Set, graphic, production	$ 88.15	
Film Cost	$ 98.40	
Playing sound effect		$ 5.15
Miscellaneous	$ 4.10	
	$410.00	$ 35.50

One can see that numerous discrepancies do in fact exist. The information in Table 7 apparently totally overstates the personnel input for script writing and related materials as the total number of persons calculated from this method far exceeds the total number of persons employed in production and engineering in 1975, 1976, and 1977, and is almost equivalent in 1978. The differences also exceed the discrepancies in the materials development comparison. The discrepancies between Tables 5 and 7 are somewhat smaller, and might reflect the need to include some amount of time for radio and television programs that is not directly accounted for in Table 8. In view of the apparent discrepancies in personnel time, this report will use budget information for personnel time in the cost analysis that follows.

Costs of the E-M Project. This section first describes the information presented in the cost table (Table 9), then restates the assumptions used in cost analysis, calculates total costs, system component costs, and average costs for some of the outputs and project some costs for future system expansion.

Cost Data. Table 9 is organized in a manner analogous to the input table as data listing resource inputs and costs for facilities and equipment were derived from the same source. The main difference is that costs are organized into categories that are more broad than the input table. For example, all expenditures for the diverse items listed for office furniture and office equipment are grouped into two major groups. There is some general organization of items under television and radio equipment; all audio-visual equipment is grouped. With two exceptions all personnel are listed in one section of the table according to activities given in budget reports. General administration and operations mostly include personnel costs and are allocated to the E-M Project on the basis of the proportion of total direct KEDI costs spent on the E-M Project

Table 9

Costs of the E-M Project

(In 1978 U.S. Dollars)

	1972	1973	1974	1975	1976	1977	1978	1979	Type of Cost	Cost Varies[1] With Number of	Lifetime of Facility or Equipment (years)
Buildings											
Research & Office Bldg.			1,193,000		18,000	8,430					
Broadcast Bldg.			1,796,000	134,000	54,000						
Other			44,000					322,900	Fixed		50
Land			257,000					312,000	Fixed		50
General Administration and Operation[2]		448,560	488,610	352,880	363,880	647,520	769,860		Fixed		
Equipment[2]											
Automobiles & Trucks			9,058	18,503	60,402	46,469	4,014		Fixed		5
Office Furniture	13,987	14,071	28,036	42,949	19,886	9,091			Fixed		10
Office Equipment	11,603	14,653	22,205	10,841	9,141	18,767	12,206		Fixed		10

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[1] The determination of whether a cost is variable is to some degree arbitrary. Strictly speaking, radio or TV production equipment would not be variable with production hours as the equipment allows for a certain capacity of hours. Similarly, a certain amount of activity may take place within a given facility but in the long run all costs vary.

[2] General administration and operation costs and equipment costs are allocated to the E-M Project according to the percentage of total direct expenditures of KEDI spent on the E-M Project. These percentages are 100% in 1972, 84% in 1973, 89% in 1974, 88% in 1975, 92% in 1976, 71% in 1977, 78% in 1978. All television, radio, and audio-visual equipment is allocated to the E-M Project. General administration includes personnel costs.

Table 9 (cont.)

Costs of the E-M Project

(In 1978 U.S. Dollars)

	1972	1973	1974	1975	1976	1977	1978	1979	Type of Cost	Cost Varies[1] With Number of	Lifetime of Facility or Equipment (years)
Equipment (cont.)											
Measuring Instruments	37	454	558	304	1,814	228	321		Fixed		5
Television Equipment											
TV Receivers		1,156	2,527	12,682			3,835		Fixed		5
Studio Cameras				495,000					Fixed		5
Video Tape Recorders				1,000,480		34,443			Fixed		5
Lighting and Control				804,620					Fixed		10
Monitors				126,800					Fixed		10
Test Equipment				34,900					Fixed		10
Installation Equipment				19,200					Fixed		10
Transmitters								8,797,701	Fixed		20
Transmitter Construction								1,772,375	Fixed		20
Transmitter Annual Operation (including personnel)								2,727,894	Variable	TV Transmission Hours	
Radio Equipment											
Radio Receivers			239	261	45				Fixed		5
Audio Control Console				15,500					Fixed	Radio	10
Tape Recorder		917	3,668	24,667	2,683	19,733			Fixed		10
Turntable				4,400					Fixed		10
Microphone				6,600					Fixed		10

Table 9 (cont.)

Costs of the E-M Project

(In 1978 U.S. Dollars)

	1972	1973	1974	1975	1976	1977	1978	1979	Type of Cost	Cost Varies[1] With Number of	Lifetime of Facility or Equipment (years)
Radio Equipment (cont.)											
Transmitter-5KW								140,000	Fixed		20
Transmitter-3KW								1,560,000	Fixed		20
Transmitter-1KW								3,600,000	Fixed		20
Transmitter Annual Operation 5KW (Excluding Personnel)								15,900	Variable	Transmission Hours	
Transmitter Annual Operation 3KW (Excluding Personnel)								170,700	Variable	Radio Transmission Hours	
Transmitter Annual Operation 1KW (Excluding Personnel)								380,400	Variable	Radio Transmission Hours	
Miscellaneous	147	1,951	1,870	446	11,861				Fixed		10
Audio-Visual Equipment	8,109	21,413	9,767	4,128	9,846	94,121	466		Fixed		10
Miscellaneous Media Equipment				44,000		11,300			Fixed		10

Table 9 (cont.)

Costs of the E-H Project

(in 1978 U.S. Dollars)

	1972	1973	1974	1975	1976	1977	1978	1979	Type of Cost	Cost Varies[1] With Number of	Lifetime of Facility or Equipment (years)
Personnel[3]											
System Demonstration					28,676	9,714	13,747		Fixed		
System Development		12,725	24,230	27,776	9,135	5,735	18,579		Fixed		
Development of Materials		27,760	86,439	119,720	113,135	218,585	211,323		Variable	Instructional Hours	5
Teachers Education		4,772	15,276	7,049	6,023	14,572	27,088		Variable	Students	
Innovation & Diffusion			20,354	11,431	8,394	9,717	14,237		Fixed		
System Evaluation		1,590	4,391	3,551	2,437	14,572	23,373		Fixed		
Broadcast-Planning & Administration		22,155	19,788	33,272	84,083	118,807	138,839		Fixed		
TV Production		40,376	39,534	40,760	121,859	179,134	236,579		Variable	Production Hours	5
Radio Production			12,509	33,353	25,707	40,193	51,269		Variable	Production Hours	5
Engineering		8,917	6,250	49,430	102,107	138,874	188,271		Variable	TV & Radio Production Hours	5
Radio Transmission								903,800	Variable	Radio Transmission Hours	

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[3] The categories for personnel differed slightly between records listing number of personnel and records listing annual salary expenditures. However, an attempt was made to obtain a correspondence among categories. The major problem in using records occurs if one compares salary expenditures as used in the cost table with number of personnel (listed in the input table) multiplied by average salary levels. Record keeping discrepancies may be further observed if one compares personnel costs for teacher education from the teacher education table with the costs reported above.

Table 9 (cont.)

Costs of the E-M Project

(In 1978 U.S. Dollars)

	1972	1973	1974	1975	1976	1977	1978	1979	Type of Cost	Cost Varies[1] With Number of	Lifetime of Facility or Equipment (years)
Other--(Printing, Travel, Office supplies, Telephone, Postage, etc.)											
System Demonstration					21,649	19,407	46,793		Fixed		
System Development		5,734	6,833	10,467	3,085	3,502	2,137		Fixed		
Development of Materials		19,782	53,603	75,434	93,970	171,348	329,632		Variable	Instructional Hours	5
Teacher Education		2,150	2,259	1,179	3,718	4,489	8,243		Variable	Students	
Innovation & Diffusion			3,866	4,676	17,185	1,622	10,537		Fixed		
System Evaluation		716	224	181	5,695	2,005	13,741		Fixed		
Broadcast-Planning & Adm. & Research		4,895	2,959	53,713	318,663	115,530	398,598		Fixed		
TV Production		25,749	16,332	42,341	148,440	281,460	233,302		Variable	TV Production Hours	5
Radio Production			41,080	49,984	84,946	61,275	94,783		Variable	Radio Production Hours	5
Engineering		5,172	7,279	86,930	416,519	492,499	168,679		Variable	TV & Radio Production Hours	5

(a similar allocation is used for automobiles and trucks, office furniture, office equipment, and measuring instruments). The other personnel category is for annual operating costs of television transmission facilities as projected data did not separate these costs into personnel and non-personnel categories.

There are three important pieces of information in the cost table for each item. The first is a distinction between variable and fixed costs. The second distinguishes the system output with which costs vary including television production hours, radio production hours, television transmission hours, radio transmission hours, student workbook instruction hours, teacher guide instruction hours, and number of students. Those costs that are fixed do vary with any of the outputs mentioned. There is some degree of latitude in labeling costs fixed or variable. For example, the building space, office furniture and equipment, and general administration would need to be increased at some point if the level of production of materials increased. Similarly, the existing television, radio, and audio-visual equipment allow for a certain capacity of program production. Jamison, Klees, and Wells (1978) assumed that the television program capacity is 1860 programs per year and the radio program capacity is 9620 programs per year. Hence, for program production less than the capacity of the equipment, the cost of equipment is fixed. When program production increases beyond the capacity of the equipment the costs become variable. Hence, these costs have been labeled as fixed in the cost table as program production has not exceeded the capacity of the equipment, and there does not appear to be any plans to expand beyond the capacity. Similarly, the proposed transmission facilities will allow for sufficient capacity to broadcast the programs. Therefore, transmission equipment is considered to be a fixed cost.

Even those costs that are considered variable, such as personnel for radio and television production, are not truly variable. If one compares program production with personnel for the history of the project one does not observe any consistent relationship. Nevertheless, it is possible to increase or reduce personnel if a decision is made to increase or decrease the number of programs.

Teacher education is considered to be a cost that varies with number of students rather than number of teachers, as it is the decision to extend the coverage of the system to more students which results in increased training for teachers. The number of teachers is directly related to the number of students based upon a decision regarding average student-teacher ratios.

Personnel for materials development varies with the number of instructional hours. These hours include teacher guides and student workbooks. However, the materials development activity also includes production of test material. For simplicity it is assumed that these tests are part of the instructional hours in both teacher guides and student workbooks. The materials development cost may then be divided into instructional hours for teacher guides and student workbooks according to the direct personnel input reported in Table 7. This is approximately 2.5 days per instructional hour in teacher guides and 1 day per instructional hour in student workbooks. Therefore, 70% of materials development costs will be allocated to instructional hours of teacher guides and 30% to student workbooks.

A similar problem exists for the engineering personnel category. KEDI records did not give a breakdown of engineering for television and radio. Therefore, engineering is divided between television and radio according to the ratio of television production personnel costs to radio production personnel costs (4.5 to 1). Therefore, 82% of engineering personnel costs and related expenses are allocated as a variable cost to television programs. Similarly, 82% of broadcast planning administration, and research costs and 82% of broadcast building costs are allocated as fixed costs to television program production.

A variety of recurrent costs such as telephone, postage, office supplies, and travel are treated as fixed or variable costs depending upon the treatment of personnel costs in the same category.

The final item in the table is the lifetime of those resources that are capital items. These lifetimes are used to calculate annualized values of the resources. The lifetime of capital resources are drawn from convention and may be more related to United States tax law regarding depreciation of capital rather than actual project experience with equipment. Without maintenance, the equipment could have shorter useful lives. With careful maintenance, equipment may last for longer than assumed in the table. For example, the Hagerstown, Maryland,television project has many television receivers that are 20 years old.

Personnel are a recurrent expense and personnel time is not annualized. However, when the personnel time is used to create an output that has a useful life of more than one year, it is necessary to annualize personnel time and other related expenses. The classroom instruction materials, television programs, and radio programs produced for the E-M Project are used for more than one year. It is assumed that the useful life of these materials is five years, at which point new materials are produced (there is no provision for revisions). Hence, in Table 9 a five year life is reported for personnel and other expenses for materials development, radio production, television production, and engineering. This life represents the system outputs rather than the input (personnel and other expenses). However, the life of equipment and facilities are related to the inputs only.

Assumptions of the Analysis. It is necessary to make several assumptions in order to proceed with the analysis. The major assumptions, discussed earlier, along with more detailed assumptions are listed below. This allows one the option of varying an assumption and determining the impact of costs.

1. The E-M Project is treated as an add-on cost to the school system. No attempt is made to determine potential cost reductions as undertaken in the KEDI study.
2. All costs are expressed in 1978 United States dollars. The Korean GNP inflation rate was used to convert expenditures in 1972 - 1977 to 1978 constant dollars with an exchange rate of 480 Won = $1.
3. Loan arrangements, interest payments, taxes, and duties are all ignored as they represent a transfer of funds only and not the use of a resource.
4. The expenditure of the T-COM system is ignored. Calculation of transmission costs is based upon projection for new transmitter facilities.
5. Equipment and facility lifetimes are as shown in the cost table.
6. The instructional content of radio programs, television programs, teacher guides, and student workbooks is assumed to have a useful life of five years.
7. In all calculations of annualized costs, an interest rate of 10% was used.
8. Costs for the research and office building, office furniture and equipment, and general administration and operation have

been allocated to the E-M Project according to the percentage of total direct KEDI expenditures allocated to the E-M Project, 100% in 1972, 84% in 1973, 89% in 1974, 88% in 1975, 92% in 1976, and 78% in 1978.

9. Costs of the broadcast building, transmission facilities, and television, radio, and audio-visual equipment have all been allocated to the E-M Project.
10. Audio-visual equipment has been treated as a fixed expense for television program production.
11. Costs for the broadcast building (fixed cost), planning and administration (fixed cost), and engineering (variable cost) have been allocated to television and radio production according to the ratio of personnel expenses for production. Therefore, 82% has been allocated to television program production and 18% to radio programs.
12. Materials development costs have been allocated to teacher guides according to the estimated personnel inputs to produce one hour of instruction. Therefore, 70% has been allocated to teacher guides and 30% to student workbooks.
13. Variable costs for radio and television programs, teacher guides, and student workbooks have been determined by calculating the average variable cost for each of these items in 1976, 1977, and 1978. That is, the total variable cost for these items has been divided by the respective total output for the three year period.

14. Variable cost per program for radio and television has been calculated by dividing the annual operating costs by the total number of programs that could be broadcast on an 8 hour per day, 5 day per week basis. This allows for program repetition.
15. Variable costs for television and radio reception have been calculated by dividing the annualized value of the receivers ($435 for television, $25 for radio) and the annual operating cost ($82 for television, $5 for radio) by 180 students based upon the assumption that three classrooms could share a receiver.
16. Fixed personnel and operating costs such as general planning and administration, system demonstration, development, evaluation, innovation, broadcast planning, administration, and research have been calculated from a three year average of these costs.
17. Teacher training has been treated as a cost that varies with the number of students (assuming 60 students per class).

Costs. The costs of the project are summarized in Table 10 according to fixed and variable costs. Fixed and variable costs contain both capital costs that are annualized at 10% and respective lifetimes and recurrent costs. These costs have been organized into 11 different categories: radio and television production, transmission and reception, classroom instructional hours (teacher guides and student workbooks), teacher training, printed materials, and general. There are seven outputs with which costs vary according to the following total cost equation:

$$TC = F + V_S N_S + V_{TP} N_{TP} + V_{TT} N_{TT} + V_{RP} N_{RP} + V_{RT} N_{RT} + V_{HG} N_{HG} + V_{HW} N_{HW}$$

where TC is total cost

F is all fixed costs

V_S, V_{TP}, V_{TT}, V_{RP}, V_{RT}, V_{HG}, and V_{HW} are the variable costs per student, television program produced, television program broadcast, radio program produced, radio program broadcast, hours of instruction in teacher guides, and hours of instruction in student workbooks, and

N_S, N_{TP}, N_{TT}, N_{RP}, N_{RT}, N_{HG}, and N_{HW} are the total numbers of each of the variables defined above.

In order to use the costs from Table 10 it is necessary to first annualize the costs for television and radio program production and classroom instructional hours to represent the assumed five year life for all of these materials. Thus, the following data are presented:

Table 10

Annualized Cost

	Fixed	Variable per output measure
Television Programs (per program)		
Building	164,085	
Equipment	602,369	
Personnel and Other	321,637	1,033
Radio Programs (per program)		
Building	36,019	
Equipment	15,371	
Personnel and Other	70,472	61
TV Transmission (per program)		
Equipment	1,241,557	
Personnel and Other		436
Radio Transmission (per program)		
Equipment	622,536	
Personnel and Other		177
TV Reception (per student)		
Equipment		.64
Operating		.46
Radio Reception (per student)		
Equipment		.04
Operating		.03
Instructional Hours (Teacher Guides)		
Personnel		101
Other		111
Instructional Hours (Student Workbooks)		
Personnel		88
Other		96
Teacher Training (per student)		
Personnel		.10
Other		.04
Building	64,035	
Printed Material (per student)		
Reproduction and Distribution Cost		2.00
General		
Land, Buildings	153,349	
Automobiles, Office Furniture & Equipment	74,515	
General Administration and Operation	760,420	
System development, demonstration, and evaluation, diffusion	102,221	

	Fixed	Variable
Television Program Production		
Data from Table 10	1087491	1033
Annualized for five years	287091	273
Radio Program Production		
Data from Table 10	121862	61
Annualized for five years	32171	16
Instructional Hours (Teacher Guides)		
Data from Table 10		212
Annualized for five years		56
Instructional Hours (Student Workbooks)		
Data from Table 10		184
Annualized for five years		49

Using the data above and the remaining data from Table 10 one has the following:

All Costs. $TC = 3337895 + 3.31N_S + 273N_{TP} + 436N_{TT} + 16N_{RP} + 177N_{RT} + 56N_{HG} + 49N_{HW}$

The above equation contains cost projections for several items: a teacher training facility, television and radio transmission facilities, and television and radio reception. An historical cost function would be as follows:

Historical Costs (with media)

$TC = 1409767 + 2.14N_S + 273N_{TP} + 16N_{RP} + 56N_{HG} + 49N_{HW}$

From the historical cost equation one can see how costs have declined through the four years of comprehensive demonstrations.

	1975	1976	1977	1978
N_S	53311	98001	172368	230981
N_{TP}	25	425	1119	814
N_{RP}	3276	3759	3950	2610
N_{HG}	1003	1902	1023	840
N_{HW}	468	934	502	418
TC	1662193	1947936	2229207	2235570
TC/N_S (Average Cost per student)	31.18	19.88	12.93	9.68

Although total costs have increased, the rapidly increasing enrollment in the comprehensive demonstrations has resulted in a dramatic drop in average costs per student. The above includes media programs that have not been used by students. If one ignored media, one would have the following total cost equation:

Historical Costs (without media)

$TC = 1090505 + 2.14N_S + 56N_{HG} + 49N_{HW}$

and the following total and average costs:

	1975	1976	1977	1978
TC	1283690	1452505	1541258	1652326
TC/N_S	24.08	14.82	8.94	7.15

One can still observe the drop in average costs per student. Costs will still decline as more students are added to the system at the variable cost per student of $2.14. This would be the limit to the drop in average cost. If the 4,500,000 students in grades 2 - 6 were served by the system the average cost (assuming no instructional material development) would be $2.36 per student.

If a decision were made to invest in transmission facilities and broadcast to the schools it would be necessary to add all media related costs to the equation (the total cost equation for all costs without the teacher training facility). To project costs one must make several assumptions regarding: number of students, number of programs transmitted, and number of programs and instructional materials produced. The data below illustrates projected costs for several different values of these variables. There are three levels of student involvement (300,000; 1,000,000; and 5,400,000) for two basic assumptions of materials production (no new materials and new materials produced at a rate similar to past rates) and two levels of transmission (broadcast of new and previously produced programs with repetitions).

Projected Costs

	Potential Future States of System					
	1	2	3	4	5	6
N_{TP}	0	0	0	1,000	1,000	1,000
N_{TT}	4,000	4,000	4,000	6,000	6,000	6,000
N_{RP}	0	0	0	3,000	3,000	3,000
N_{RT}	6,000	6,000	6,000	9,000	9,000	9,000
N_{HG}	0	0	0	1,000	1,000	1,000
N_{HW}	0	0	0	500	500	500
N_S	300,000	1,000,000	5,400,000	300,000	1,000,000	5,400,000
TC	6,079,860	8,396,860	22,960,860	8,877,360	11,194,360	25,758,360
TC/N_S	20.27	8.39	4.25	29.59	11.19	4.77

Costs diminish as student enrollment increases and approach the variable cost per student, $3.31, but remains higher due to increased fixed costs associated with materials production and radio and television transmission.

SUMMARY

To an economist the item of prime importance in analyzing an investment is the allocation of resources to a particular project. Economists view physical resources as being in scarce supply and believe that these resources may be used for different investments in both the public and private sectors. It is the existence of alternative investments that creates a value for any single resource. This value in an alternative use translates into a market price for the resource. Hence, to compare alternative investment opportunities that utilize different combinations of resources, the economist ideally would attempt to use monetary resource costs that reflect the social value of the resource. Given the complicated assumptions and the controversy surrounding assumptions that translate divergent physical resources to a single monetary measure, the typical approach is to use actual budget expenditures to reflect costs. This costs analysis has provided a detailed list of all physical and human resources used. It has then explicitly listed the assumptions that were used to convert these resources into monetary figures. If there is a question regarding any of these assumptions, it may be altered and the consequences upon the cost analysis calculated.

In analyzing an experimental system that invloves a heavy initial expenditure on facilities with a relatively low level of participation, one can expect rather large initial per-student costs to be incurred. Therefore, it is useful to project costs to the future to determine the pattern of costs that decision-makers face. This analysis was concentrated upon seven specific immediate system outputs that decision-makers would be interested in: number of students served, television programs produced, television programs broadcast, radio programs produced, radio programs broadcast, hours of instruction in student workbooks.

The basic approach to the analysis of costs was to first list all physical and human resources according to the year of operation. Then costs were assigned to each of these resources in constant dollars (to eliminate the distorting effect of inflation), and it was determined which of the costs varied with which outputs and which remained fixed (not varying with any of the outputs).

Based upon these assumptions two historical cost functions were determined (one including radio and television and one without) that depicted the historical behavior of the system during its first four years of operation (1975-78). These analyses revealed that there was a rather large level of fixed costs. Therefore, as student involvement quadrupled in the four years of operation, the average costs per student (without media) declined from $24.08 to $7.15. The average costs per student (with media--program production but no transmission) declined from $31.18 to $9.68. The average costs per student (with media--program production and hypothetical transmission) declined from $78.42 to $21.56. All of these estimates reveal the dramatic effects of increasing enrollment in a system with large equipment and facility investments. In projecting costs it was found that the costs would further decline to $4.77 per student if all students were covered by the system and a heavy use of both television and radio was made.

CHAPTER IX

THE EVOLUTION OF A COMPREHENSIVE NATIONAL EDUCATIONAL RESEARCH AND DEVELOPMENT INSTITUTE

A. Introduction

The planning that went into the establishment of KEDI saw its major initial task that of improving the efficiency and effectiveness of instruction and of materials for classroom teaching/learning activities. The study done by Florida State University, which was the basis for a five-year technical assistance project under the United States Agency for International Development, saw this goal as being one of taking a systematic approach to designing new teaching and learning materials which embody new, creative teaching approaches, and of systematically introducing the new materials and classroom management approaches through try-outs and revisions and ultimately through nationwide in-service training of teachers to use the new materials and methods. Broadcast television materials were to be used as an integral component of teaching modules of units, both as a device to introduce into the classroom experiences which might not otherwise be available, and as a way of introducing the new teaching approaches rapidly and systematically.

KEDI, appropriately, structured itself with this primary task in mind. However, even in the AID agreement which established the five-year technical assistance effort, it was recognized that the new institution was expected to develop a continuing, long-term program of educational research and development activities which would continue beyond the first five-year period. What was not clear was the direction that this research and development program would take. Some felt that it should be limited to experimenting with new teaching materials and delivery methods so as not to diffuse the efforts of the institution beyond its core initial task. Others felt that the institution should become the primary policy, planning, and basic studies institution in the education sector in Korea, with many of the delivery aspects of materials and methods work to be handled by the Ministry of Education once KEDI had developed the new approaches. For a variety of reasons, as noted below, the latter view has prevailed.

The Ministry of Education, as most ministries, is primarily occupied with administrative aspects of keeping the educational system running. There is little time for even qualified staff of the Ministry to do the kinds of policy, planning, and basic studies work which is increasingly needed as educational problems and issues become more complex. Furthermore, the universities in Korea, while staffed with many outstanding faculty, are not as rich in research institutes and programs as are universities in such countries as the United States. With relatively few graduate programs, universities have not traditionally seen research as a major part of their activities, at least to the same degree as in some other countries.

Other ministries in the Korean government have developed research arms as semi-autonomous bodies to serve their policy, planning and basic studies needs. The Korean Development Institute (KDI) performs these functions for the Economic Planning Board (EPB); the Korean Institute for Science and Technology (KIST) so relates to the Ministry of Science and Technology (MOST); various institutes are attached to other ministries to perform similar functions.

It was natural, then, for the Ministry of Education to begin turning to KEDI for guidance on a number of policy and planning issues. At first, these issues were generally related to broad, philosophical issues (i.e., the early studies on educational goals, on historical foundations of the National

Education Charter, etc.) or to special educational problems of the moment i.e., community education within the New Community or Saemaul Undong Movement). By 1974 and 1975, the Ministry was increasingly seeking guidance on over-all educational policy and issues. KEDI was asked to undertake a major policy study around the problem of increasing numbers of high school graduates who were unsuccessfully seeking entrance year after year into the university, causing serious social and economic tensions. Concurrently, KEDI was asked by the Ministry of Education and a variety of funding agencies to do basic studies in a number of specialized areas, including vocational and technical education, population education, sex role perceptions, community education and value education. Most of these were specific areas considered significant in the light of the Government's five-year economic development plan and of education's role in it.

This early period of KEDI's program (through the mid-seventies) was characterized by a kind of ad hoc approach to the selection of basic research, policy, and planning activities. To some degree, it was crisis oriented. KEDI responded to the Ministry of Education when a crisis has assumed critical dimensions (i.e., the problem of increasing numbers of high school graduates attemption to enter university year after year) and attempted to develop rational approaches to resolving the crisis in a fashion that would be politically acceptable to all parties concerned. Similarly, when the Ministry of Education had difficulty in putting together the education aspects of the fourth five-year plan (1977-1981), KEDI was asked to help.

Furthermore, the program, to some degree, was funding agency oriented. Funds were available for population education and sex role perception studies (USAID and United Nations Fund for Population Activities), so KEDI began work in these areas. Such outside funding was critical in the early period of KEDI activity since the major portion of the budget provided by the Government and USAID for KEDI was earmarked for the infrastructure necessary for reform of teaching methods and materials at the elementary and middle school level (the E-M Project). Less than 25 percent of the budget was available for policy, planning, and basic studies until the 1978 fiscal year when the budget available for such work was increased to about 37 percent of the total. Appropriately, the government and KEDI are increasingly recognizing that such research activity must be programmatic in nature, with regular, programmatic funding. With such support, KEDI can move away from project, crisis-oriented studies to a program of activities designed to provide cumulative information and guidance to policy and planning bodies in the government. Such a program may, in the future, find it possible to anticipate crisis rather than reacting to them.

The program, indeed, is maturing in this direction. Studies begun in the late seventies (1976-8, in particular) show several program trends. One group of studies is particularly concerned with accumulating cost data on the public schools in general and on vocational and technical schools in particular. Related to these studies is an effort to accumulate and analyze date related to labor force supply and demand. These studies are establishing a data base useful for a variety of policy and planning efforts. For instance, a critical current policy issue has to do with the rapidity with which the government should introduce compulsory education at the middle-school level. Another has to do with the effects of the government's policy of assigning all applicants to high school to available spaces in both public and private schools by lottery, thus depriving schools of ability to choose their students. The data base accumulated through the basic studies program is useful in examining these policy issues.

At the same time, the Ministry of Education and the Economic Planning Board (EPB) and the Korean Development Institute (KDI) are increasingly depending on KEDI for inputs into the planning process. In the mid-seventies this input consisted primarily of KEDI staff participation in the 22 inter-ministerial committees assigned to prepare portions of the fourth five-year plan (1977-1981). The Office of Planning and Management of the Ministry, however, ultimately asked KEDI to take the deliberations of the various committees and to actually draft the plan. Subsequently, the EPB in 1976 and 1977 asked KEDI, through the Ministry of Education, to prepare a draft of a fifteen-year plan for the education sector, and in 1978, KEDI was assigned the task of preparing a long-term plan outlining major issues and problems in the future and feasible alternative approaches for dealing with them. In all cases, of course, KEDI drafts are submitted to the Ministry of Education and to KDI and EPB for final decisions as to what will be included.

Major issues now in the educational planning field revolve around the appropriate long-term role of KEDI in educational planning. KEDI is not the implementing arm of government in the education field; the Ministry of Education performs this function. From an ideal point of view, KEDI should prepare studies which illuminate the probable educational, social, and economic effects of various alternative choices for the future, and the Ministry of Education, in cooperation with the Economic Planning Board, should prepare the actual plan, choosing the alternatives which appear most feasible in the broader context of the government's goals and financial constraints. If KEDI is to be required to prepare the actual plan, in addition to providing data inputs for plan preparation, considerably additional staff and resources will be required in the future.

B. The Curriculum Development Function

As with policy, planning and basic studies functions, there has been a parallel evolution of KEDI's curriculum development functions. When KEDI was established in the early 70's, the scope and sequence of the curriculum was established by the Bureau of Textbook Compilation of the Ministry of Education, and KEDI's role (primarily through the Elementary-Middle School project) was to find better ways of packaging and delivering this curriculum through materials supplementary to the textbooks approved by the Ministry. In 1977, however, the textbook compilation role of the Ministry of Education has largely been delegated to KEDI (along with a number of Ministry staff formerly assigned this task) and thus KEDI became responsible for reform of curriculum content as well as for packaging the curriculum for more effective delivery. Legal authority for final approval of curriculum changes, of course, still rests with the Ministry.

This development has led KEDI to move toward an organization and structure which will integrate the functions of the old Textbook Compilation Bureau of the Ministry with the functions of the E-M project. The proposed organization and structure (not yet approved as of July, 1978) will group all curriculum development activities under a Curriculum Development Center, with an overall curriculum planning unit and a number of subject matter units which will be responsible both for regular, periodic revisions of the curriculum planning unit and a number of subject matter units which will be responsible both for regular, periodic revisions of the curriculum scope and sequence as well as the preparation of new textbooks and supplementary teaching materials (workbooks, teachers' guides, examinations, etc.). The broadcast center will be split off from curriculum work (it is now considered part of the E-M Project) and will become a somewhat autonomous unit concerned with supplementary educational broadcasting of all types. Instructional broadcasting, as a part of curriculum materials packages, will not be emphasized.

The proposed new KEDI structure will thus consist of three Bureaus, one for Basic Research; one for Policy and Planning Research; and one for curriculum development, to be called the Curriculum Development Centre. The Broadcasting Center will be a fourth unit, but attached directly to the President of KEDI, and to have close connections with the Korean Broadcasting Service (KBS).

As noted above, the core funding of KEDI was originally tied to a five-year project designed to revise the elementary and middle-school materials and classroom management approaches in Korea. Accordingly, early KEDI organization and structure reflected the needs of the core project. With the addition of the textbook compilation function, KEDI must now adjust to the broader, programmatic tasks implied. During the early period of its acceptance of the new function, problems of integration of the old work with the new were obvious. The textbook compilation group from the Ministry of Education arrived with the task of revising the entire middle school textbook series. During 1977 and 1978 they proceeded to do this with little or no interaction with the E-M Project staff (which had been concentrating on revising teaching materials for the existing elementary-school curriculum). They hurriedly revised and issued some fifty new middle-school texts without drawing on the experience of the E-M Project staff in terms of appropriate formats and methods for presentation of the materials. Presumably, the E-M Project staff will now take over and design student workbooks, teachers' guides, examinations, and other materials for the middle-school texts developed by the former Textbook Compilation Bureau.

In the future, with integration of the two groups within the new Curriculum Development Center, an integrated approach to curriculum revision and materials development should be possible.

C. Institutional Linkages*

Essential to understanding the increasing acceptance of KEDI as a comprehensive educational research and planning agency is a description of the various institutional linkages which KEDI has developed in undertaking its activities. In classic institution-building terminology, these have included enabling linkages (those which facilitate policy and financial support); functional linkages (those which enlist the working cooperation of other institutions and their personnel in undertaking activities and which facilitate quality and acceptance of results); diffusion linkages (those necessary to assure that the work of the institute is known and understood by the various interest groups); and normative linkages (those with other groups concerned with establishing standards of quality and performance in a field).

KEDI has established effective enabling linkages with the Ministry of Education, the Educational Planning Board, and various financing and assistance agencies including USAID, the United Nations Fund for Population Activities (UNFPA), United Nations Development Program (UNDP), UNESCO (including its Regional Office for Education and the Asian Center for Educational Innovation and Development in Bangkok), UNICEF and others. Functional linkages have been established with universities, faculties of education, teacher training colleges, provincial school boards and their planning offices, schools, the School Administrators Training Institute of Seoul National University, and other research institutes such as the Korean Institute for Research in the Behavioral Sciences (KIRBS), the new (inaugurated in 1978) Academy for Korean Studies (AKS), and others. Diffusion linkages have been extensive through various professional publications of other organizations, through KEDI publications, and through a vareity of conferences, seminars and training activities, some sponsored by KEDI and others sponsored by other organizations but with KEDI participation. A number of normative linkages have been established with professional organizations such as the Korean Society for the Study of Education, various teachers groups, governmental agencies such as the Korean Development Institute, and through various self-evaluation efforts, including various kinds of governmental audits and evaluations.

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*Institutional linkages are discussed in greater detail later in I. International Cooperation and Linkages and in J. Internal Linkages.

The nature of these linkages varies and tends to be flexible, according to the organization and circumstances concerned. For instance, KEDI linkages with some organizations are of an informal variety and consist primarily of inviting staff members of those organizations to participate in various KEDI activities and committees or of offering KEDI staff for participation in conferences or other events of the other organizations. An example is the unclear relationship between KEDI and the new Academy for Korean Studies. AKS has an educational research unit which will examine broad philosophical and historical issues in Korean education. Of the moment, there is no formal working relationship between the two organizations, but the head of the education unit at AKS is a long-time KEDI consultant, and good informal coordination will be likely.

Certain linkages are, at best, unclear, and perhaps problematic. One such unclear relationship is that between KEDI and the National Institute of Education (in Korean, literally translated Central Education Research and Training Institute) in the Ministry of Education. Established about the same time as KEDI, the Institute has concentrated on the in-service training of teachers in audio-visual methods and on the collection and publication of statistics on the educational system.

Joint activities between KEDI and the NIE have been limited, and there has been little clarification as to where the role and function of each begins and ends. Currently, there is a possible joint project with NIE in the KEDI pipeline (the Decentralized Educational Resource Centers described below), and it appears that KEDI will do the conceptual design for the centers and the NIE will actually implement the project. Relationships between the two organizations have been strained, even in planning this one joint project. A clearer definition by the Ministry of Education and by the two organizations of role, function and working relationships is critically needed in order to prevent friction in the future and in order to maximize the use of resources.

Similarly, attached to all junior teachers colleges in the country (responsible for elementary teacher training) is an Education Research and Training Institute involved in in-service teacher training. Although KEDI has worked with several of these in conducting workshops under the Elementary-Middle School Project, the vast majority of these institutes have no continuing linkage with KEDI and take little note of KEDI research or materials when conducting their in-service activities.

Clearly, as KEDI moves into a concern for implementation of its instructional systems and for disseminating results of its research activities, a more direct linkage with these Education Research and Training Institutes is needed.

KEDI takes the position that one must be tolerant of considerable ambiguity in a number of these linkages. This would appear to be a healthy position in an institution that has been assuming new functions and new relationships and considering the complexity of the institutional network in Korea with interests of one kind or another in education. However, there are certain institutions whose functions and programs are closely related to those of KEDI. KEDI must establish a conceptual framework in assessing which of these institutions should be the object of careful nurturing, perhaps leading to long-term formal relationships and linkages.

D. Institutional Problems

Any new institution, as it evolves and grows, encounters a number of problems. KEDI is not unique in this respect.

A major problem has to do with internal working relationships. As noted above, the institution, with experience, is moving from projects to programs, in its basic studies, policy and planning work, and in its curriculum work. However, tradition in Korea is that research activity is an individual endeavor, and KEDI has not been completely successful in organizing effective team efforts. For instance, one researcher may be undertaking a basic study on content and methods for teaching value or moral education, while another researcher in another unit is undertaking to develop a new textbook or workbook in value and moral education. Since both researchers are working on clearly defined projects, and since they are in different units, one may not be fully aware of what the other is doing. The results of basic studies are distributed to the other divisions, but there is no infrastructure to assure that the results of the study are taken into account by the curriculum developers in the relevant area.

Similarly, there is no formal mechanism to assure that problems sensed by the curriculum developers are taken into account in formulating the basic studies program. Basic studies and policy and planning activities tend to be formulated based on either the interests of the individual researchers in these units or in response to critical problems felt by the Ministry of Education, the Economic Planning Board, the Blue House (office of the President of Korea) or other government office or funding agency.

While these external relationships are good, KEDI's long-term effectiveness will be enhanced only if internal team-work is improved. Horizontal relationships between the various units must be improved. Many of the policy, planning and curriculum problems of concern to KEDI require more than the attention of one researcher. They must benefit from the cumulative wisdom of staff members in the various KEDI units. A kind of flexible, task-force oriented horizontal structure must complement the vertical structure.

There is also some concern among some KEDI staff members that the researchers efforts be significant and not trivial. KEDI has assembled a staff which includes highly qualified scholars, and many of these wish to undertake studies of national significance and not studies of day-to-day curriculum design and implementation problems. Here, of course, there must be a balance. Broad, nationally significant research studies must be undertaken, but if no one does the day-to-day, more common-place study necessary for translating the results of the broad, basic studies into effective operational programs, the broader studies will have little impact.

Although various formal and informal linkages with other organizations are good, there remains a question as to how much KEDI should dominate the educational research efforts of Korea, and how much it should encourage others to do significant research. Although individuals from a variety of other organizations are involved in KEDI's activities, KEDI rarely, if ever, contracts with other organizations to undertake research. With KEDI's special relationship with the Ministry of Education, one might envisage a long-term role of research stimulation whereby KEDI would be the channel for distributing educational research funds to various institutions in the country, with a mechanism of review committees to establish research priorities and to review and approve of proposals. Thus far, no such approach has been undertaken seriously.

A special problem which is related to the earlier problems mentioned above is that of the role of television in the new curriculum approaches being developed by KEDI. Television was originally designed to be an integral part of teaching modules at the elementary and middle school levels. Lateral linkages between the television staff and the staff preparing the workbooks and teacher guides under the Elementary Middle School project, however, have been poor, and the E-M Project staff have tended to prepare the television scripts, passing these to the television staff after the entire teaching module has been prepared. The television staff, in turn, have often found the scripts to be of unsatisfactory quality, either in terms of using the medium effectively or in terms of selecting out what television can do best within the teaching unit. There has been little integrated planning of each module with the curriculum and television staff working together from the beginning so that the skills of both staffs can be focused on each module from the conception stage through the production stage.

This lack of an integrated E-M Project team, which includes those preparing the television materials, has led to the television group effectively becoming more and more autonomous to the point where the new reorganization plan suggests that it will be a unit quite separate from the basic functions of the organization and attached directly to the office of the President of KEDI. It appears that the television function has drifted completely away from its original function of being an integral part of the teaching package and has become a unit which will behave more or less as a public service broadcast unit, preparing general programs which may be of use to a variety of in-school and out-of-school audiences. To some extent, this may reflect the interests of the television staff who may feel that instructional modules for the classroom are "trivial" and more general documentary and educational materials for general audience may be more "significant".

E. The Basic Studies, Policy, and Planning Program

The Elementary-Middle School project and the broader curriculum development work emerging from it are discussed in other sections of this chapter will examine in some detail the basic studies, policy and planning work of KEDI.

Figure I groups the major studies completed, underway or planned as of July, 1978. The studies have been grouped under three headings, Basic Studies, Policy, and Planning for ease of understanding the basic intent of each study. Similarly, the studies under Basic Studies have been grouped according to type, as follows: Historical and Philosophical Foundations; Curriculum Content Studies; Delivery System Strategy Studies; and Economics of Education Studies.

This schemata is, at best, a loose one, developed for the purpose of illuminating the trends in research activity within KEDI. Within the research groups of KEDI, there is no such grouping of activity, and one researcher may be involved in a study of skills training modules appropriate for middle school vocational arts while, at the same time, he is involved in a project plan for the establishment of technician training. Clearly, there are two different kinds of activity, the first being concerned with curriculum and methods and the second with delivery system strategies.

Furthermore, the classification of Policy Studies in this chart is limited to those studies which deal with critical issues of nationwide political, social and economic import. KEDI generally classifies a number of more technical studies designed to provide professional guidance as policy studies, including, those on value education, which are here classified as Curriculum Content and Methods studies. Obviously, most KEDI studies will provide a kind of policy guidance to various professionals, but it appears useful to classify many of these as technical studies, classified according to the practical professional use to which they might be put.

Using the classification system of Figure I, it can be seen that KEDI has become involved in a variety of activities which should be mutually supportive. The various basic studies are accumulating quantitative, qualitative, and normative data which should be useful in policy and planning activities. The basic studies themselves are often inter-related. The economics of education studies were those introduced last at KEDI (becoming significant only in the late seventies) illustrating the maturity of the organization in becoming aware of the need for better examination of the costs and probable benefits of various alternatives to the improvement of education in Korea. Such studies should provide an increasingly useful data base for many of the other studies in the future.

F. Basic Studies

Historical and Philosophical Foundations

KEDI appropriately began its basic studies activities with a seminar on education goals which was designed to involve a broad range of interested persons in Korea, some of whom were skeptical of the establishment of KEDI in the first place. A report on the seminar was published in early 1973, and KEDI

Figure I

Basic Studies, Policy and Planning Projects and Programs at KEDI, 1972-1978

BASIC STUDIES

1. Historical and Philosophical Foundations
    - Educational Goals
    - Historical Foundations of National Charter of Education
    - Desirable Image of the Korean People
    - Attitudes toward the National Referents (Identity)
    - Value and Moral Education
2. Curriculum, Content and Methods
    - Population Education
    - Environmental Education
    - Industrial Arts Education
    - Community Education
    - Sex Role Perceptions
3. System Delivery Strategy Studies
    - Teacher Education
    - Decentralized Educational Resource Centers
    - Technician Training
    - Career Guidance
    - Special Education
    - Education for Korean Residents Abroad
    - Pre-school Education
    - Life-long Education
4. Economics of Education Studies
    - Survey on Educational Expenditure
    - Cost-Benefit of Public Schools
    - Effectiveness of Technical and Business Education in Korea (including related labor force supply and demand studies)

POLICY STUDIES

1. The University Examination Repeaters Study
2. The Compulsory Education Study
3. The High School Equalization Policy Study

PLANNING STUDIES

1. The Fourth Five-Year Education Plan (1977-1981)
2. The Fifteen-Year Education Plan (1977-1991)
3. The Fifth Five-Year Education Plan (1982-1986)
4. Provincial Educational Planning Training

did a further study of applying Korean educational goals in the classroom. The latter was published in late 1975.

A study of the historical foundations of the Charter of National Education and another on defining a desirable image of the Korean people were done in 1973-74 and reports were published. A further study assembled the thoughts of outstanding Korean scholars on human dignity.

These early KEDI studies related to the National Education Charter were significant in establishing KEDI as an institution concerned not only with educational technology and efficiency, but also an institution equipped to examine and question the very basics of the educational system in Korea and its relationship to Korean society and culture. The National Education Charter was proclaimed on December 5, 1968. Since that time, the Government has progressively introduced innovations to create a new education system uniquely suited to the changing needs of the country. KEDI, appropriately, took early leadership in bringing together individuals from professional and academic organizations, the political arena and the schools and universities to focus attention on further definition of the implications of the National Charter. These early efforts provided the impetus for other more specific studies, done later.

KEDI's attention turned, in the mid and late seventies, to the practical problem of defining value and moral education which is consistent with Korean ideals and the National Charter of Education. In late 1976 and early 1977, KEDI completed two studies having to do with student attitudes. One was a study of students' attitude toward the national referents, and the other was a study on the principles of attitude change.

The study of attitudes toward the national referents explored the attitudes of elementary and secondary school students toward the government, national symbols, the Korean people, the native soil, ancestors, the national future, and patriotism. Degrees of egalitarianism and altruism were explored; attitudes assessed toward duties of tax payment and national economic development, government personnel in general, soldiers, judicial officers, assembly-men. Further explored were attitudes toward the flag, the national flower, and the national anthem.

Nearly two thousand students from elementary school to university were surveyed in the study. Generally speaking, student attitudes toward the national referents were positive. However, the higher the school level, the lower the attitude scores related to virtually every referent. Furthermore, rural students generally had more positive attitudes than the urban students.

The study concluded with recommendations which suggested that:

1. Content in the national curriculum related to the national referents be increased.
2. Various social organizations and their programs be examined to see if their influence is positive and to find ways in which their influence can be coordinated toward improving attitudes toward the national referents.
3. Educational materials be prepared which stress attitude change and which encourage the use of intensive and active methods related to the national referents.

This and the second more theoretical study on principles and attitudes change (based on international literature in the field) have led to a new project on value education. This study, completed in late 1977, undertook to do a content analysis of the twelve moral education textbooks used in the six elementary-school grades in Korea to see what principles of value education were being followed. The study generally found that the texts were lacking in methodology and appeal found to be useful in attitude formation, according to the beliefs of social psychology and value education specialists internationally.

Underway in mid 1978 is a study of teacher attitudes toward the national identity. Likert-type scales are being administered to some 1,200 teachers with questions comparable to those administered to students in the earlier survey. Teacher attitudes will be compared with student attitudes, a seminar will be held on the results of the study, and recommendations will be made for improving school materials and activities related to the national identity. Also underway is a study of Korean literature to try to identify the traits considered important for the ideal person in the future of Korea. The latter study is at the request of a national assemblyman who has a special interest in such matters.

KEDI is undoubtedly entering into an important area with these studies. However, the studies to date seem to make a questionable assumption that attitudes can be taught much as math or biology or history. The assumption seems to be that if attitudes toward the national referents are poor, put more about the national referents in the curriculum. If social organizations do not reinforce positive attitudes toward the government, tell them to do so. If the students do not have proper values, however defined, develop some teaching materials to teach value.

Attitudes are the product of a total family, school, community and nationwide environment. They are the product of the entire curriculum and school environment insofar as the school is concerned, and not of some units called value units or attitude units. KEDI studies seem, so far, to be only scratching the surface of this interesting and often elusive problem.

Furthermore, there seems to be little linkage between the one researcher undertaking these studies and the KEDI staff which are preparing the E-M Project materials and the new middle school textbooks. Although a number of suggestions have been proposed as to content and methods which would strengthen all texts and especially the social studies texts, there is little evidence that any of these suggestions have been followed by the curriculum development group.

Curriculum, Content and Methods Related Studies

Basic studies in this area have tended to concentrate on non-traditional aspects of the curriculum, and have included studies in population education, environmental education, community education, sex role perceptions, and industrial arts and skills training at the middle school level. The nature of each study has varied according to the interests of individual researchers and, to some degree, to suit the interests of funding organizations. In most cases, these studies include an end product of pilot instructional materials and/or detailed suggestions as to where the curriculum should be modified in order to include material not now included. In some cases, suggestions are made related to new educational activities and delivery systems; thus some of these studies impact on those described in the next section on Delivery System Strategy. Similarly, of course, studies described in the preceeding section often make general suggestions as to curriculum improvement and revision. And some studies in this section examine social and philosophical issues, such as sex-role perceptions of Korean students.

Nonetheless, the studies described below tend to be those specifically concerned with curriculum revision in the light of the changing new social, economic or technical context of Korean development. These modifications are assumed to take place in the context of the historical and philosophical considerations established through the basic studies in the previous section. The modifications are to be delivered to the students, teachers, and schools through the strategies suggested in the studies described in the section on Delivery System Strategies and in the section on Educational Policy and Planning.

A discussion of each study undertaken to date follows.

Population Education. Korea has had an active national family planning effort since 1962. Although these programs met with reasonable success, the Government felt that a national population education effort of a more intensive nature was needed to help reach the norm of a small family in Korea, and in 1973 it submitted a project to the United Nations Development Program which was funded to begin in March 1974 and to run through 1977. The UNDP contribution amounted to $1,176,940 and the counterpart government contribution was to be slightly above 400 million Won (slightly more than $300,000).

In the period from 1955 to 1960, it is estimated that there was a population growth of slightly less than three percent per year in Korea. This has gradually dropped until the population growth for the period 1970-75 was estimated at about 1.7 percent, even though mortality rates had declined at the same time. Birth rates were at the level of about 15 to 17 per thousand in 1955 and had dropped to about 8.2 per thousand in 1975. However, with continuous migration to urban centers, and with more women entering the labor force, new population each year available for employment is currently estimated at 2.8 percent. With virtually all arable land under production in Korea, with technological processes in agriculture increasingly being used, and with increasing numbers of secondary school graduates and university graduates unemployed, the government feels that there must be a continuing effort to establish a small family as the national norm.

The government also feels that there need to be new programs to encourage the training and employment of women, although these policies seem not to have affected dramatically the curriculum in the schools yet.

The MOE Population Education Project, begun in 1974, enjoyed the support of the United Nations Fund for Population Activities (UNFPA). The project was nationwide and involved universities, junior teachers colleges, provincial in-service training centers, secondary schools, and elementary schools. The KEDI project results fed into the Central Office for Population Education, established in the Ministry of Education under the direction of the Vice-Minister and directed by a Chief Executive Officer who is also a Bureau Director at KEDI.

The project included four major activities, all done under contract, with the exception of the general evaluation function which was done by the Central Office with the help of consultants. These activities were: (1) curriculum and materials development for the schools, (2) training of personnel in population education, (3) development of demonstration college programs in population education, and (4) research.

KEDI received the sub-contract from the Ministry for the development of the curriculum and materials and for some research activities. Various colleges and universities received contracts for the training of teachers, principals, and supervisors; and other universities and organizations received contracts for research activities on teacher knowledge and attitude, effects of instruction and environment on children's acquisition of attitudes, and other relevant concerns.

KEDI recruited three professors to work part-time in the curriculum studies, one of these professors specializing in social studies, a second in environmental studies, and a third in social psychology. Materials developed followed the Elementary-Middle School Project design, though they were not integrated into the Elementary-Middle School Project.

Materials were based on a preliminary study done by KEDI suggesting general guidelines for population education. A second more specific study suggested population units appropriate for fourth, fifth, and sixth grades; the first, second, and third year of middle school; and the first, second, and third year of high school. Also this study suggested areas of the curriculum where population and family life education should be infused into the regular curriculum.

This second curriculum study resulted in a series of remarkable scope and sequence charts which offer concrete suggestions for the introduction of population education materials in all the grades of elementary through high school. However, this manual has not as yet been used by the elementary E-M Project staff in its work. It was, however, used to some degree when the middle-school textbooks were revised in 1977 and 1978, and it is likely that more population education materials will be in the new curriculum at all levels as it is revised by KEDI, now that the old textbook compilation functions of the Ministry of Education has been transferred to KEDI.

The experimental units that are being developed were tried out in 11 elementary schools and 11 middle schools. These are not the schools which are used for demonstration purposes in the E-M Project. High school materials for the program were completed later and similarly tried out.

The first series of field tests was conducted from April to June, 1976, and KEDI sent teams of evaluators to the field for summative evaluations and interviews in July. The results of the field tests were positive. An example of the feedback process in the Daegu area and Gyung-Buk Province illustrates the field data collection procedures.

The Gyung-Buk Province Board of Education participated fully in the planning of the field tests and in the development of a teacher training seminar for the Province. The Provincial Educational Research Center had a number of joint meetings with KEDI to plan the field testing, and is enthusiastic about the program and about prospects for future collaboration.

Gyung-Hae Girls Middle School reported good response from the students, and the teachers felt that the student materials and the teacher guides were excellent. The materials were used in three experimental classes of 25 students, and the only problem was that the units were used in the homeroom for one hour a week only since the materials have not as yet been integrated into the regular curriculum. In view of this, the students did not always take the materials seriously, since they were not part of the curriculum on which they would be examined at the end of the year. Teachers suggested that the use of the project method in the materials requires special training and that some of the materials emphasize too much the negative aspects of population control.

The Jong-Po Elementary School near Daegu reported somewhat similar results. The material was used in twenty periods of the sixth grade, and there was better interest at the beginning than toward the end. Interest flagged somewhat, perhaps because the material was extra-curricular and not required for the examinations. There was some embarrassment in dealing with the physiological aspects of the material, and the parents often did not understand the need to introduce such material at the sixth grade. A number of teachers felt that there was a need to include more material relating to the issues to the local community.

Concurrent with the field testing, KEDI conducted a survey on population consciousness among students and teachers. A total of 48 elementary, middle, and secondary schools, chosen to be representative of conditions throughout the country, were surveyed to discover pupil and teacher attitudes toward the appropriate size of the family, age of desired marriage, attitude toward migration and similar matters. A report on this survey was published late in 1976.

Other related activities included:

1. A resource book for teachers (elementary, middle, and secondary), issued in October, 1976;
2. Various substantive studies to provide background information for curriculum developers and teachers (population analyses; population increase and social change; population increase and economic development; over-population and human eco-system). Consultants were used for these studies, and in each topic, theory was presented plus materials for teacher training.
3. Audio-visual materials, including a slide set with teacher's manual and casette recording which has been distributed to 1,200 high schools in Korea by the Central Office for Population Education in the Ministry of Education. A similar set was under preparation in 1978 for distribution to middle schools and a film and slide set are being planned for elementary schools.

4. Issuance of a series of volumes summarizing the results of the project in the form of resource volumes for curriculum developers, researchers and teachers. These resource volumes included:
    a. Total program design and summary
    b. Population analysis approaches
    c. Population increase and social development
    d. Population change and economic development
    e. Population growth and management of the environment
    f. Reproduction and population
    g. Family life and maternal and child care.

Although direct funding by UNFPA of KEDI's population education project terminated in 1977, UNFPA continues to fund the Central Office for Population Education in the Ministry of Education. The Ministry, in turn, continues to ask KEDI for help in specific aspects of population education.

The Ministry of Education particularly expects KEDI to work closely with colleges and universities in the conduct of teacher training programs in the preparation of materials for these programs. During 1977, KEDI, in cooperation with eleven colleges of education throughout the country, helped the Ministry of Education in the training of 7,000 high school teachers, using a manual prepared for teacher training at the middle school and elementary school levels. KEDI is also studying the possible use of videotape recorders in population education and examining the possibility of preparing teacher trainers who can visit remote schools in order to prepare teachers in those schools.

The population education program is one of the outstanding examples of how KEDI can work with a variety of ministries, funding organizations, universities and teacher training colleges, boards of education, and schools in conceptualizing a new curriculum in support of a national goal, then developing the materials for delivery of the new curriculum, testing the materials, developing in-service teacher training programs, and, in general, delivering a complete package designed to introduce new substance in the school program. KEDI's recommendations were largely followed in the education portion of the Government's National Plan for Population Policy (1977-1981), and the Ministry of Education has agreed to integrate population education materials into a revised curriculum at all levels. UNFPA and the Ministry of Education have agreed to the funding of a five year implementation project, headquartered at the Ministry, and KEDI continues to be asked to assist in implementation activities.

It is important also to point out that four major universities in Seoul have been involved in population education. Each, through the participation of a faculty team, has developed unique ways of infusing family planning and population education into various fields of study and specific courses.

The Seoul National University team has developed new course syllabi for the humanities and the social sciences involving relevant concepts of family planning. The Korea University team has also developed new course syllabi for the social sciences and has published reference material on population education for student use. Ewha Women's University offers an elective course on population education for freshman and sophomore students. At Yonsei University the basic concepts of family planning and population education are integrated with the content of a course on School and Society which is required of students in the pre-service teacher training program.

Environmental Education. In large part because of the Population Education project, KEDI has become increasingly interested in Environmental Education. Toward the end of the basic population education work described above, KEDI convened a seminar of some thirty top specialists in Korea to examine various approaches to environmental education. Various aspects of environmental studies were discussed, including the socio/psychological, physiological, and ecological.

Based on the conclusions of this seminar, (published in book form), two films were prepared for distribution to high schools to sensitize students and teachers to the problems. One film dealt with problems of urbanization and a second with the need to preserve the environment. One copy of each film was distributed to the Provincial Board of Education in each of eleven provinces.

In December, 1977, a Basic Study on Curriculum Development for Environment Education was published (Research Report #60), outlining concepts of environment (both natural ecosystem and man-made), environmental problems (population, industrialization, resources, pollution), and environmental protection (natural conservation, environmental conservation, natural purification, and better quality of environment). This study also suggests that environmental education should be introduced in various elementary school subjects (moral education, social studies, natural science and vocational education); in middle-school subjects, including moral education, geography, civic education, science and home economics; and in national ethics, Korea geography, society and culture, biology and home economics in high school.

Support for the above activities has been forthcoming under the population education project which ended in 1977, and it is not clear the extent to which the new population education program beginning in 1978, partially funded by UNFP and headquartered in the Ministry of Education, will continue to support KEDI activities in this area.

The gradual shift in research emphasis from population education to environmental education illustrates the KEDI movement from projects to programs. Once the basic work has been done on population education and the research work was well on its way to being translated into concrete curriculum and teacher training activities, KEDI shifted its attention to a related problem, that of environment. Where population and environmental concerns overlap, they will be treated concurrently in the new curricular and teacher-training materials to be developed.

Industrial Arts Education. KEDI's concern for industrial arts, vocational, and technical education clearly matches an increasing government concern that elementary, middle, secondary, and higher education are generally too academic and without sufficient orientation for preparing skilled manpower needed at all levels, and especially at middle levels. Educational planning and expansion efforts in the past could be characterized by the social-demand approach. This and the government compulsory education policy have resulted in a system which currently enrolls nearly all school-age children in elementary school. In the mid-seventies, 75 percent of those finishing elementary went on to middle school, and 68 to 70 percent of those finishing middle school went on to secondary school, and these figures are increasingly annually. One out of five secondary school graduates continued on to the university.

The lack of sufficient skills training programs in secondary education, the lack of effective pre-vocational education in the middle schools, the emphasis in secondary curriculum on preparation of students to pass university entrance exams, and the emphasis in universities on liberal arts have combined to produce a situation of considerable concern to government planners. At least half of the high school graduates who qualify for university traditionally have not been able to enter because of limited capacity and yet are not trained for any occupation (see Repeater's Study under Policy, below). There is a critical shortage of middle-level manpower, especially for heavy and chemical industries to be developed in the five-year plan which began in 1977.

In order to deal with these problems, the President of Korea, in March 1973, initiated a basic skills honor system as a means of broadening the base for skilled manpower. In October 1973, the Ministry of Science and Technology (MOST) assigned implementation studies on the basic skills honor system to the Korean Commission on International Vocational Training, and in December 1973 KEDI began a pilot project to develop an instructional model for basic skills training at the middle school level.

This model has since been implemented through the development of 81 skills training pilot modules, incorporating skills training work-sheets, 8-millimeter single concept films, and teacher training materials. The model and materials have been field tested in several middle schools, and further curriculum studies were started in January 1975 to develop a suggested content for general technical education and homemaking for middle-school students. Finally, in March 1975, KEDI initiated a nine month survey of practices of general technical education in the middle schools and issued a report suggesting needed revision in curriculum and facilities in order to make possible the full implementation of a basic skills honor system at the middle school level. A December 1974 KEDI study which suggested the standardization of facilities and tools for the basic skill honors system programs at the middle school level provided additional input for the final model.

The pilot teaching materials include nine 16-millimeter demonstration films, 30 film loops on specific skills, three teachers' guides (metal-working, woodworking, electricity and electronics), nine student workbooks, and 30 operation sheets and checklists. The materials are sufficient for a three-year middle school course in industrial arts, including some home economics materials. Estimates are that it would take about 4,800 million Won or about US$ 9 million to disseminate the industrial arts materials to all schools nationwide and perhaps the same amount of money to develop a three-year program in home economics. The total effort would include projectors for the film materials and some equipment for shops so that the students would have the tools necessary to practice the skills demonstrated in the materials. Furthermore, although a variety of technical school teachers and professors of technical colleges have participated in the preparation of the materials, there has been no attempt at extensive teacher training beyond the locations where the materials have been tested, and thus some of the estimated cost would be involved in in-service training of teachers.

Accordingly, KEDI in 1975 proposed a major five-year project, to begin in January 1977, for the development and diffusion of Individually Assessed Skills Instructional Systems for the Improvement of Technical Education in the Korean Middle Schools. The total cost of the proposed budget would have included a government contribution of $1,308,500 with a UNDP contribution of $1,186,365. The Project would have established a system for the continuous examination of existing curriculum and texts; revision of teacher training and instructional materials; supply of equipment, tools, and facilities on a standardized basis to rural middle schools; and the dissemination of the various teaching materials developed to 2,000 middle schools, after tryout in 20 middle schools. The project would have begun in January of 1977 and run through 1981. It was not approved, although as of mid 1978, the Ministry of Education is still considering possibilities for distribution of the KEDI materials, perhaps beginning in 1979.

When the UNDP proposal was rejected in 1976, the Education Sector Plan for 1976-81 was under preparation with various sub-committees looking at employment, manpower, science, and technical education problems, all coordinated by a planner in the Ministry of Science and Technology. Emphasis of this committee was on secondary vocational education and on expanding two year technical colleges.

According to MOST*, 1.8 million workers at the middle-skills level will be needed to support the chemical and heavy industries during the period from 1976 to 1981. Of these, 840,000, or about 47 percent, are to be prepared in secondary technical-vocational or agricultural schools and the rest are to be trained in public and private vocational training centers including those sponsored by the Office of Labor. The need to introduce pre-vocational skills training in the middle schools to relate to this secondary effort seems not to be fully recognized at policy levels of the government. To some degree, this may be because of the need to concentrate for the moment on effective use of a $70 million World Bank Loan, approved in the mid-seventies, to improve vocational, agricultural and technical high schools.

In the light of the sizeable expansion of secondary and junior college level vocational and technical education, it would seem that KEDI's expertise might be useful to the Ministry in designing new training modules for secondary schools, and to the vocational training institutes under the Office of Labor in designing modules for use in out-of-school vocational and technical training. Furthermore, there have been a number of recommendations that industry step up its own training programs, and KEDI might well be able to sell its services to industry.

* Ministry of Science and Technology

393

One of the problems continues to be the lack of effective joint planning between the Ministry of Education and the Office of Labor and the vocational institutes under the latter. Part of the problem may be because of the outside agencies which have assisted in the setting up of the various institutions charged with vocational and technical training. UNDP has supported the setting up of the Central Vocational-Technical Institute under the Ministry of Labor which is charged with the training of vocational and technical teachers. Vocational Training Institutes, in turn, have been funded by the Asian and World Banks. Eight of these are now operational or being built in urban areas and eight or nine in rural areas. Each of these projects has been planned in isolation, and there has been little attempt to establish a government-wide policy of how the formal schools under the Ministry of Education and the vocational-technical training under the Labor Institute are to complement one another. As part of KEDI's possible long range planning function, these matters might well receive priority attention.

In future planning in this field, KEDI should take note of a thought-provoking survey of employers and employees done by World Bank consultant Manuel Zimmerman and associates for the Economic Planning Board. These studies show that vocational-technical high schools tend to prepare graduates who are not as immediately employable in middle-level technical skills as those from a program which channels middle school graduates to the very practical vocational-technical high schools. These latter schools, however, cost considerably more to operate than the vocational training institution. Although this study does not suggest the elimination of the vocational-technical high schools, it does imply that there are alternate channels for preparing middle-level manpower that should be taken into account when planning for the future.

In the section which follows and which deals with KEDI studies related to the economics of education in Korea, it will be noted that the organization is indeed entering into a variety of cost-benefit studies, including several which deal with vocational, technical, and business education.

Community Education. One of the government's key goals since the early 1970's has been to revitalize rural development, in large part through the Saemaul Undong or the New Village Movement. To attain the objectives of the Movement, virtually all government ministries and departments have undertaken a variety of educational, community action, and community development related activities. The Movement was launched as a full-scale national effort in 1971, after a smaller pilot effort in 1970.

In the education sector, the Movement is seen as related to the community schools' activities begun in the early 1950's. Now, however, all rural schools are to become more active through the conduct of community development projects, in-school study of the goals of the Movement, and cooperation with activities of other ministries and departments.

The basic ideas of the program, as described by the President of the Republic, are as follows:

1. The New Village Movement is a drive for better living.
2. It is a movement for spiritual enlightenment.
3. It is a movement for taking action.
4. It is a movement to encourage new social discipline fostered by autonomous change of social injustice resulting in a new national concept of social welfare.

The Movement sees as its goals the utilization of all land, the utilization of all labor force in productive activity, and the improvement of agriculture by making all farmers technocrats. It further sees a better balance in living standards between urban and rural populations. All strata of society, rural and urban, are being encouraged to participate in community development activities.

The early stages of the Movement may have been less than fully successful because of limited stress on improved productivity and income for rural villages (total stress was on spiritual enlightenment and self-help without sufficient outside investment in infrastructure to assist in increased productivity). In 1974, only two percent of the government's budget and six percent of its investment budget was invested in New Community Movement activities. These shortcomings have been taken into account in current estimates of the various ministries, and budget allocations will likely increase.

As the primary educational research and development center of the country, KEDI early recognized the need for policy studies concerning the present and possible future roles of the education sector in the New Village Movement. These studies took a logical progression, beginning with a study on the theory and practice of new community education, followed by a questionnaire study of principals, teachers, and administrators in 29 primary schools and 28 high schools to find the actual state of new community education activities as of late 1972 and early 1973. Also examined were the social and psychological variables of the school and community as they relate to practice within community education. These analyses were for the purpose of determining the problems of new community education activities as faced by teachers.

These studies showed that primary school facilities are more often open to the community than high school facilities; that these facilities are most often used for athletic meetings or activities, for motion picture shows, displays, and exhibits. In only 25 percent of the cases reported were school facilities used for social interaction activities, suggesting the need for more events of this nature.

Rural schools hosted more athletic and display meetings than urban schools, and primary schools hosted more athletic, social, and motion picture meetings than high schools. Attendance at these activities was mostly by mothers of students (47 percent) and women and girls in the village in the vicinity of the schools (48 percent).

A variety of adult, non-formal education activities were in progress at some of the schools surveyed. Fifty-seven percent of these activities stressed the need for simplified family ritual standards (marriage, funeral, and other types of community rituals are considered too complex and costly in Korea); 34 percent of the activities dealt with family planning; 32 percent with vocational skills; 35 percent with recreation; and 21 percent with child-rearing and guidance. Obviously, a number of activities dealt with several of these areas at the same time. Urban primary schools spent more time in these activities than rural schools but urban high schools spent less time than rural high schools. Only 16 percent of non-formal education activities identified dealt with professional knowledge such as animal breeding and agricultural technology.

One of the goals of the new community movement suggests that students should be involved in public service activities. The average number of hours per year in which students participated in such activities was 42.5. High school students served twice the time in such activities as compared to primary students. Most of the community activities of students involved cleaning of streets; installing door plates; making national flag boxes and flag-hoisting stands; and providing books for the village library and articles of comfort for soldiers and policemen. These studies also found that there were some community data used in teaching in the schools, although this was minimal.

There was little significant difference found in social and psychological variables as they relate to the activities, except that older principals seemed to encourage more activities than the younger school principals. The more community education courses the teachers had attended, the better their attitudes. The characteristics of the community seemed to have little effect on activities. Teachers reported a good deal of lack of understanding of how to go about community education activities, and principals reported budgetary problems in implementing activities.

Recommendations coming out of this study suggest greater cooperative activities by all concerned in order to help school personnel understand what community education is all about. They also suggest that efforts should be planned to attain substantial community development effect as opposed to highly visible projects with little effect. More training of teachers and principals and better collaboration between schools and other agencies were encouraged.

Another study was undertaken in 1974 (published in December of that year) to develop more specific strategies for implementation of new community education programs. The model provided in the report was checked for validity through conferences with school inspectors and teachers in three areas: a large city, a smaller city, and rural areas.

The report begins with a conceptualization of new community education and relates it to earlier movements and events, including: the Community School Movement of the 1950's and early 1960's, the Charter of National Education, the October Revitalization, and others. The overall educational goal of New Community Movement was agreed to be the intentional modification of behavior of students and of people necessary for the development of the community and of the nation as a whole.

The strategies document outlines the tasks, objectives, and criteria for development of content, methods, application, and evaluation procedures appropriate in the schools in order to contribute effectively to the overall goals.

Seven major categories of action are recommended in the schools:

1. Classroom structural changes
2. Improved guidance in school life
3. More meaningful public service activities
4. More meaningful educational activities for productivity
5. More emphasis on non-formal education within the school
6. More extensive opening of school facilities and events to the community
7. Better school support of village development through involvement of teachers and students in development activities

In addition, KEDI completed a survey in late 1975 (published in December, 1975), Toward Improvement of the New Community Education for the Rural Poor), which sheds some light on the problems of rural participation in educational efforts. The survey interviewed farmers, village leaders, and rural guidance officers. About three-quarters of the village leaders and nearly sixty percent of the farmers had participated in one or more education programs, but few had attended more than two or three such activities. Most indicated that they had learned something about cultivation of new varieties of rice, environmental improvement, disease and pest control, utilization of agricultural chemicals and farm management. Most, however, said that they applied few of the skills or knowledges because of lack of facilities and money or because the information or skills that they had were insufficient. Most such educational programs are of short duration and appear, at most, to disseminate limited information in insufficient depth to encourage application. Also, the activities are also at inconvenient times, the teaching is poor, and the trainees are poorly selected.

The rural guidance officers reported that the programs suffered because of lack of village cooperation, lack of money for implementation of projects, lack of effective local leadership, lack of institutional support, and lack of time and manpower.

As a modest next step, KEDI developed, during the first half of 1976, a model for spiritual (attitudinal) training for use in the New Community Movement. This study attempted to collect principles from social psychology that might be applied to training of community leaders and guidance officers. A good deal of reference-group theory appears in the early versions of the model.

Finally, KEDI is continuing a cooperative arrangement with the Centre for Production and Training for Adult Education and Television (CEPTA-ITV) based in Singapore, whereby the Singapore group assists KEDI in the production of community education films. Four such films were produced in 1975 (The New Community Movement in Schools, New Community Leader Activities, Pig Raising, Tong-il Rice Cultivation), and another four were completed in each of the following years, through 1977.

Serious problems seem to have arisen, both in production planning and in possible utilization of these films. KEDI and the Singapore group have elected an innovative approach to production whereby no professional actors are used. Film crews go the countryside and film actual people to illustrate the points in the film. However, it has been difficult to get the technical advice of the Office of Rural Development of the Ministry of Agriculture on the content of the films, and the final products have been judged technically inadequate by that office. Furthermore, the Office of Rural Development maintains its own film program, using professional actors, and apparently has no intention of distributing or using the KEDI films. The question then arises as to whether this film program should be continued. If the technical content is not approved by the technical groups concerned, and if they are not to be used in the programs where they could be helpful, why do them? This seems to be a case of available resources (the help of CEPTA-TV) shaping the program in meaningless directions. The CEPTA-TV relationship, however, includes training provisions for KEDI staff, and this undoubtedly has been useful.

The longer term problem, of course, is to find a means of coordinated government planning of educational activities under the New Community Movement. The Ministry of Agriculture is providing technical education for rural youth and farmers, the Ministry of Home Affairs in training New Community Movement leaders, the Ministry of Agriculture is doing films on rural development organization. These activities are coordinated by the Ministry of Home Affairs which chairs an inter-Ministerial committee, with Vice-Ministers in other Ministries participating. It would appear that there is also a need for a sub-committee to look at the possible areas of collaboration in formal and non-formal education and training. As an input to the Committee, KEDI might well inventory educational services and programs in the non-formal area, looking to more effective planning of such services so that they complement one another in creating a cumulative impact toward the achievement of New Community Movement goals.

As of mid-1978, there is little follow-up by KEDI on its earlier Community Education work. The unofficial National Association for School and Community continues to support school efforts in community education, but local members of the association have difficulty in motivating people to participate in activities. As shown in KEDI's recent study of sex-biases, Koreans tend to be home-bound and are not highly motivated to participate in community activities.

Various local units of the National Association for School and Community sponsor activities for women (flower arranging, singing, etc.) and a number of local units sponsor evening classes in various skills much as typing and welding.

Sex Role Perceptions. With U.S. Agency for International Development support, KEDI initiated in 1976 a study of sex role perceptions in Korea. The purpose of this study was to explore a significant indicator of modernity, mainly the role of women in society and the perception of society as to the proper role of women, and to prepare and field test pilot educational materials designed to change sex-biased attitudes.

Completed during late 1976 and early 1977 was a major survey of the role of women in various occupations in Korea, the mode of distribution of family income, of educational opportunity, and the degree of involvement of the two sexes in education, religion, politics, labor unions, clubs, and other community institutions. Furthermore, Koreans' perception of sex-related role behavior was studied (personality traits, occupational perception, and ability attitude) and their attitudes were related to modernity of the total and subpopulations studied in the survey (as measured by a modernity scale based on studies of modernity in the scholarly literature).

The study found that Koreans tend to be home bound, regardless of sex, and the degree of involvement in various kinds of organizations is low. Men tend, however, to be more active in political and labor union activities while women tend to be more active in religious and educational institutions.

Both men and women have sex-biased attitudes in Korea. One's level of education, occupation, and degree of industrialization of the community affects the degree of bias. Some rural and urban differences were significant. Differing dimensions of modernity were strong in each area, with high liberal attitudes in urban areas and high sharing among men and women of decision authority in rural areas.

KEDI completed in 1977 a small scale pre- and post-test of 12 lesson units entitled "Basic Life Skills", for middle schools, combining the content of industrial arts and home economics programs. A teacher's guide and a 20 minute film completed the materials package. The new units are designed to change sex-biased attitudes by teaching both boys and girls the basics of both home economics and industrial arts. Preliminary reactions to the units by both parents and teachers was good.

Test and observation results showed that:

1. The program was more likely to be effective in changing sex-biased attitudes
2. The achievement levels were higher for both boys and girls in a co-educational classroom seeting than they were in a non-co-educational classroom situation

Two reports had been published on the project by mid 1978, one detailing possible components of a compensatory education program to change sex-bias attitudes, and a second on the results of the field testing of materials. AID funding, totally around $35,000, has been exhausted and it appears unlikely that further work in this area will receive high priority in the near future.

The results of the studies, however, have been shared with staff concerned with home economics and industrial arts curriculum, and it is likely that some of the approaches developed under the project will be reflected in the industrial arts and home economics curriculum work in the future.

System Delivery Strategy Studies. As one can note in examining the basic intent of the above studies, KEDI began its work with a primary interest in determining appropriate educational goals, content and methods. As each study progressed, however, there was realization that goals, contents, and methods are effective only if the total system and its parts can deliver effectively. Accordingly, KEDI's attention has increasingly turned to system delivery strategy studies.

As will be noted below, some of these studies have related to specific problems originally identified in curriculum and methods work (i.e., decentralized educational resource centers which are seen as a mechanism for better dissemination of E-M Project and other KEDI curriculum materials). Others, especially those planned for 1978 and onward, are seen as total system studies, designed to improve the delivery of education in an area, and out of which can be expected to come a variety of studies within an overall research theme.

Teacher Education. KEDI, with a major concern for the improvement of education at all levels, early recognized the critical role that effective teaching plays in educational reform and in the delivery of quality education.

Four base-line studies were completed by 1975 and published. Two were undertaken on the initiative of KEDI administration and staff. One of these was a comprehensive survey of the literature relating to teachers and teaching in Korea. The other was a study of the status and the problems of elementary teacher education in the junior teachers colleges. Two additional studies were undertaken at the request of the Ministry of Education to strengthen its efforts directed toward the improvement of teacher education. One dealt with the development of a model for in-service education and the other was concerned with the improvement of the pre-service system of teacher education.*

In addition to research and policy studies, various KEDI projects provide an opportunity for a practical application of certain of the recommendations of the in-service education study. In-service education programs have been conducted for the instructional staff of the High School of Air and Correspondence and for teachers and administrators to alert them to the results of the various KEDI projects, including those in population education, industrial arts education, community education, and the various goals studies. In addition, of course, there has been extensive in-service teacher education connected with the E-M Project.

For example, an early program for the instructional staff of the High School of Air and Correspondence involved a carefully planned manual to be used by instructional staff, a one-day orientation for principals and teachers, and the use of programmed study materials and instructional radio.

One of the first in-service programs for teacher trainers in the population education program was more complete and comprehensive and included a three to five-day program plus instructional materials and a carefully detailed workbook and teacher guide.

Other early in-service education activities undertaken at the request of the Ministry of Education included a program of school management training for school principals and a program of lectures and workshops for 9,000 teachers in Seoul and Pusan in both professional and academic subjects.

*These and other studies are described in Chapter VII TEACHER EDUCATION.

As the KEDI program matured in the mid-70's, one could note a closer liaison with the teacher-education programs of the E-M Project, development of closer relationships with junior teachers colleges and colleges and departments of education in universities, cooperative planning with teacher educators relative to the development of new approaches to in-service and pre-service teacher education related to KEDI instructional systems and materials, continuation of close working relationships with Ministry of Education, and greater emphasis on basic research in teacher education.

Activities in the mid 70 s were directed toward identification and description of critical teacher education problems, and KEDI has indicated that the following problems merit investigation (both in research and action domains) in the future:

1. Since the beginning of the 1970 s, there has been a considerable discrepancy between demand and supply of teachers, with an excessive number of graduates from teacher's colleges. (This was verified in a team visit to the Junior Teachers College in Cheong Ju Province, where 95% of the 1976 graduates have no job offers).
2. Teachers Colleges have difficulty in recruiting excellent students because of insufficient incentive systems.
3. Many elementary and secondary teachers are willing to transfer to jobs in other fields because they think they do not receive sufficient benefits either financially or psychologically. (However, Cheong Ju Province reports a current yearly attrition rate among primary teachers of only 2.4% compared to an 8.7% in 1970, perhaps suggesting that the oversupply of teachers is encouraging those who have jobs to hold on to them.

4. There is a lack of integrity among curricula in teachers colleges.
5. There is a lack of consistency between what the pre-service teachers learn in their schools and how they perform in a class after graduation.
6. There is a shortage of in-service training programs for upgrading teaching competencies.
7. Lecture-type instruction is the main method used in present facilities and there is limited opportunity for practice teaching.

KEDI has made a number of recommendations concerning these problems, and is in the process of further research on teacher competencies, with the idea of producing model in-service teacher education programs. A slidetape program, based on UNESCO's Introduction to Educational Technology, has been produced and tested. Radio broadcasting for in-service teacher education began in March, 1976, designed to introduce new educational theories to teachers. Each weekday a fifteen-minute lecture is aired through an AM channel, and a survey was done in 1977 on the effect of these broadcasts.

The effectiveness of KEDI's work in teacher education policy and action, of course, depends on the extent to which the organization can involve the various teachers colleges and faculties of education in their work. Although the number of consultants from various faculties of education who are involved in various KEDI projects is impressive, it appears that there is still some distance between KEDI and the junior teachers colleges, charged with pre-service training of elementary-school teachers. If there is to be long-term effect of KEDI's recommendations in teacher education, ways must be found to influence the curriculum, methods, and programs of the sixteen junior teachers colleges and all other institutions involved in teacher preparation in Korea.

Decentralized Educational Resource Centers. On paper, there exist 160 educational materials resource centers, one in every kun (county) in the country. Presumably, each center serves about 40 elementary and middle schools. In fact, many of these centers are not operational or, at best, offer minimal services with untrained staff and little materials or equipment.

KEDI has suggested that these centers be assisted by KEDI to the point where they have the trained staff to develop materials to supplement KEDI elementary-middle school material, and perhaps resources to help counsel schools on the use of KEDI material. At the same time, UNICEF has an interest in assisting these centers if they will take on the job of helping primary school teachers in science education. Such an approach would supplement UNICED assisted science centers located at junior teachers colleges in each province.

UNICEF will provide US$ 40,000 in 1979 for KEDI and the National Institute of Education (located in the Ministry of Education) to jointly undertake a pilot project to improve the centers in two or three districts. KEDI will handle basic studies of what materials are needed, what equipment needs to be imported, and what training is needed. The National Institute of Education will handle implementation, following KEDI's recommendations.

Related to this concern is a problem encountered by a science equipment production center originally financed in part by UNICEF. The Korean government invested US$ 1,000,000 and UNICEF US$ 250,000 to establish this center to produce science equipment for schools. The Center has been taken over by the Korean Teachers Mutual Fund, which now has problems in marketing the science equipment produced by the center. The equipment is not part of the curriculum packages produced by KEDI, nor does the Ministry require that schools buy them. Since demand has been low, only small quantities are being produced at relatively high cost.

About 250 items are being produced in lots of 1,000. Yet, many items should be distributed in lots of one million a year to get proper use in the schools.

It would make some sense for KEDI and the Ministry of Education to link the science equipment production center to the network of resource centers in each kun, perhaps designating the latter as marketing and repair centers for the equipment. At the same time, KEDI might well examine the possibility of incorporating equipment from the center into its curriculum packages.

Technical Training. In 1977 and 1978 KEDI staff participated in a committee of experts organized by the Ministry of Education to study ways of improving technician education programs. As noted before (under Industrial Arts Education), Korea expects a shortage of middle-level technicians during the five-year development plan period ending in 1981 and is willing to invest sizeable sums in new training programs. For instance, in addition to an existing World Bank loan of US$ 100 million to improve secondary technical high schools, the government may seek another such loan for the improvement of Junior Technical Colleges and four year technical institutes.

In mid 1978, KEDI embarked on a study to identify more clearly alternative approaches to technician education, and suggestions as to how to go about implementation and evaluation of such programs. Concurrently, KEDI developed a teacher's guide for industrial arts at the high school level since there are few specialized industrial arts teachers and no such guide existed.

There are a number of critical unresolved problems in this area. For one, technical high schools cost a great deal for the numbers of graduates they produce, and it may be possible to prepare some technicians using alternate approaches. Many industries prefer to hire secondary school graduates and to train them for technician jobs rather than to hire more staff with more advanced training who would require higher salaries. Also, it is difficult to attract good industrial arts and technician training instructors in high schools and junior colleges because of the market for their services in industry. This problem may be partially resolved as the Technological Education College of Choong Nam University (established about two years ago) begins producing teachers for mechanical and technical high schools. Finally, there is the unresolved question of the extent to which Labor Institutes under the Ministry of Labor can prepare certain types of technicians, using middle school graduates as entrants into the program.

It is assumed that KEDI will attempt to clarify some of these issues.

Career Guidance. With the increasing complexity of Korea's economy, it has become clear that students no longer can be aware of the various career possibilities without improved guidance programs. KEDI staff have examined this area and have drafted a plan for the Ministry of Education to establish a Career Guidance Center, perhaps in cooperation with KEDI. Such a center would be charged with training career guidance counselors for the schools and KEDI might be called upon to prepare the career guidance materials.

Capital costs for the center have been estimated at US$ 3 million and as of mid-1978, the fate of this proposal is unclear. KEDI, however, intends to continue studies in this area, and some pilot materials may be forthcoming.

Studies in the Pipeline. By mid 1978, KEDI was planning its program more and more along thematic lines, and had identified a number of areas of priority for future activity. Areas which will receive attention in the near future are as follows:

1. Special education, to include studies of the role of special education in the system, and identification of appropriate goals,

content, methods and teacher training for physically handicapped and for gifted children.

2. Education for Korean residents abroad, to include a policy study, identification of appropriate goals, contents and methods, and development of materials.
3. Pre-school education, to include a system study and examination of appropriate goals, content and methods.
4. Life-long education, to include continued work on the Air and Correspondence Education (described elsewhere in this report) plus more fundamental work in examining the total network of out-of-school and non-formal education activities in Korea, examination of content and methods, and the development of appropriate materials for such programs. Linkages between school and industry and various forms of vocational training would be studied in this context as well.

Economics of Education Studies. The first several years of KEDI's program included little emphasis on issues related to the economics of education. As KEDI developed various projects, however, it became obvious that justification for mass implementation of various recommendations would depend on good cost-benefit analysis and comparative studies of educational cost. In addition, KEDI gradually became more involved in various policy and planning studies which required a better base than had existed in the past in Korea (see sections later in this chapter on Policy and Planning Studies).

Accordingly, beginning in 1976 and 1977, a major economics thrust in KEDI's basic studies program took form. The studies undertaken to date and currently (mid-1978) underway include the following:

Survey on Educational Expenditure. A number of KEDI studies have suffered because of lack of good educational cost data by region, type of school, and sponsorship of school (public or private) and this study was designed to provide such information. The study was initiated in-house, without outside sponsorship, although the data generated will be useful in a number of other studies which do have outside sponsorship.

The study was begun in the summer of 1977 and:

1. Examined annual investment in education, both public and private, by level and region;
2. Examined apparent relationships between investment and academic achievement;
3. Identified cost differentials by level, school, and region;
4. Projected educational expenditure for the next five-year period, both public and private (1978-1982).

Investment in education was defined to include all institutional costs plus all costs to the parents and to the pupils. Included at middle and high school levels were "opportunity costs", in essence, the wages that students might have earned had they not been studying.

Information was collected from some 21,000 students enrolled in private schools and their parents by means of a log book questionnaire sent out in mid 1977 and filled out at mid-term, at the end of the term, during vacation period, and at the beginning of the next school year. Students at each school level were included. In addition, data from public schools was gleaned from government documents supplemented by interviews with school principals and school boards.

Total average educational expenditure per pupil in 1977 was found to be as listed in Figure 2.

FIGURE 2

Average Educational Expenditure per Pupil,

Korea, 1977 (In US$)

School Level	Total Expenditure	Public Expenditure	Private Expenditure	Opportunity Cost
Elementary School	202.5	119.8	82.7	-
Middle School	1,593.1	167.4	82.7	1,343.0
High School	1,944.3	30.17	134.3	1,508.3
College and University	4,328.5	907.0	332.3	3,099.2

Source: KEDI memoranda supplied to the Evaluation Team

As might be expected, the average income per family had a high correlation with expenditure for education on the part of children from such families. Similarly, those children with families of high income tended to progress further in the educational stream.

The study raises serious questions concerning the availability of equal educational opportunity in Korea. With high proportions of the cost of education being supported privately, most of this by the families of children themselves, there is the major question of whether or not the government should pick up more costs of education, at least for poorer families.

Various simulation techniques were demonstrated in the study for estimating future educational costs. Some of the methodologies used included the cost-differential method, trend analysis method, and Edding's formula.

Data from the study will be useful in examining equality of educational opportunity in Korea. They will also be valuable in simulation studies when the cost of various alternative dutures is being assessed. The data should also be helpful in estimating the social and private marginal rate of return by school level on the basis of available date on average wages of school leavers.

Cost-Benefit Ratio of Public Schools in Korea. With average public and private costs of education at the various levels determined (see study above), KEDI proceeded to examine what the costs would be if KEDI Elementary-Middle School materials were used instead of traditional materials. Furthermore, achievement levels of KEDI E-M Project classrooms would be compared with traditional classrooms in order to include any increase or decrease in learning as a benefit factor. The cost-benefit ratios are being compared using the following formula: BCR = NPV x B/CP, where BCR = Benefit-Cost Ratio; NPV = Net Present Value of Extra Schooling; B = Average Percentage of Year Gained as Result of KEDI Materials and System; and CP = Cost per Student.

Preliminary results (the study will not be completed until late 1978) indicate that it will cost schools and parents less to use the KEDI system and materials than to use traditional methods and materials. This conclusion is primarily based on the fact that KEDI pilot classes achieve, on the average, a portion of a grade level higher than traditional classes, and on the assumption that KEDI materials will cost parents less than the commercial materials they now buy. The study does not appear to include any development costs for KEDI materials nor any new costs for managing the system and providing teacher training.

A portion of the study will also see if there are any differential effects of television instruction. Since KEDI has not been broadcasting, as yet, it is assumed that video-tape materials will be used in some schools used in the comparative study.

Effectiveness of Technical and Business Education in Korea. This study was designed to investigate the effectiveness of technical and business education in Korea. Completed in late 1978, the objectives were to: (1) analyze the relevance of technical and business education in terms of the needs of an industrial society; (2) to evaluate outcomes of technical and business educa-high schools with those of vocational training offered in other institutions; (3) investigate the employment patterns of graduates from technical and business high schools; and (4) estimate internal rates of return to technical and business education and compare these with other forms of technical training. Essentially, initial wages paid graduates of the various programs plus wages paid after five and ten years were compared in order to generate a rate-of-return estimate on each category of training.

Questionnaires and interviews were conducted with managers and 1,026 employees (graduating from commercial and technical high schools after 1970) in heavy chemical and industrial factories in Seoul, Busan and Daegu. Costs of education in eight technical high schools, six commercial high schools, and six vocational training institutions were also obtained.

Most managers were generally pleased with graduates of technical and commercial high schools, but facilities in these schools, although improving rapidly, still leave something to be desired. The resources available in the commercial high schools are poor relative to the technical high schools. Internship-type programs, virtually required as a part of technical high schools, were deemed useful. Information was obtained by students on possible future employment through a variety of informal sources, but less than half depended on the school. White-collar jobs for workers with high-school education pay more as initial salaries than technical jobs and the pay scale rises more rapidly than those for technical jobs.

The study concludes that the rate-of-return of technical schools is less than that of commercial schools and liberal education secondary schools because the employees of the latter are paid more upon initial employment and have salary scales which increase more rapidly over a five - and ten- year period. It also notes that salaries paid skilled workers with only middle school training plus labor institute (out-of-school) vocational training are substantially lower than all other categories, thus suggesting a low rate-of-return for this category of training.

Unfortunately, the study does not deal with the fact that salary levels are, to some degree, fixed by level of formal education completed, no matter how productive the worker. Thus, there is little indication that many workers with the middle school plus labor institute training are, in fact, less productive in the economy than technical high-school graduates, even though they make less money. Some of these factors demand more study.

The study concludes with the suggestion that business and industry begin picking up more of the costs of technical education because of its high cost. It also recommends study of pay scales for technical workers since these scales currently do not attract top students.

KEDI intends to continue studies in this critical area. With the increasing shortage of technicians, the high cost of training them, and the low salaries, problems will remain for some time. Such problems affect the entire educational system. For instance, employers are increasingly hiring technical high school graduates to do the jobs formerly done by four-year engineering graduates in order to save labor costs. Four-year graduates, in turn, are seeking posts in managerial and sales posts. If this is the trend, their training should be modified to prepare them for this new role. Also, the role of technicians must be better clarified so as to better design suitable training programs. KEDI studies in this area can be expected to continue for some time.

G. Policy Studies

Obviously, many of the basic studies above have policy implications, but they are generally technical studies designed to provide data input for a variety of policy and planning purposes. As KEDI has proceeded with the above studies, however, the Ministry of Education, the Korean Development Institute and the Economic Planning Board, and the Blue House (office of the President of the Republic) have increasingly turned to KEDI to undertake broad policy resolution activities around major educational problems with political, social and economic implications.

Three such studies, involving not only technical analysis, but broad discussion with the various interest groups in Korea in order to come up with feasible alternatives, have been undertaken by KEDI to date. One was the so-called Repeaters Study, completed in 1976, which suggested approaches appropriate to resolving the problem of increasing numbers of high school graduates who could not get into the university and who kept repeating the entrance examination year after year. The second was a study of when and how to introduce compulsory middle school education (still underway in 1978). The third dealt with the high school equalization policy which allots high school entrance places by lottery, irrespective of whether or not the school is public or private. A discussion of these three studies follows.

The University Examination Repeaters Study. Typical of the problems which can assume crisis proportions, in part because of inadequate and continuous educational policy and planning activities in the past, was the phenomenon in the mid-seventies of large numbers of unemployed high school graduates. High school graduates had been increasing without a comparable increase in university spaces. In 1965, 30.3 percent of all high-school graduates entered the university. In 1976, only about 20 percent found university spaces. University graduates, in turn, earn, on the average, about two times as much as high school graduates, so there is tremendous pressure to obtain a university education. A further incentive is the traditional respect for education among Koreans. Thus, high school graduates who do not pass the university entrance examination or who fail to find a space in the university, tend to repeat the examination year after year. Many remain unemployed while they take special courses to prepare for the next examination.

In the Seoul area, a third of those who took the university entrance examination in the mid-seventies were repeaters. Of those who failed, about 60 percent tried again the following year. In 1976, 159,000 of those who took the examination failed, and about 100,000 tried again in 1977.

From 1970 to 1976, there has been a 210 percent increase in high school graduates and only a 130 percent increase in college enrollments. In 1970, there were about 64,000 failures on the college-entrance examination; in 1976 it was about 159,000.

These phenomena, of course, had not gone unnoticed in the educational community of Korea. Higher-education institutions, parents, the press, and others noted the problem and suggested various approaches, such as the expansion of higher education, for the resolution of problems.

In January 1976 the President of the Republic, in an official annual visit to the Ministry of Education, expressed his concern and suggested that the Ministry examine alternatives for resolving the problem. The Ministry turned to KEDI, and KEDI, in turn, organized a seven-man policy group and a larger advisory body representing the various Ministries and community interests.

After six months of meetings with the various ministries and other organizations and a number of meetings of the policy and advisory groups, KEDI issued an interim report for discussion with the various Ministries and the general public. The interim report received immediate enthusiasm from top policy-makers, and the KEDI Commission was instructed to report directly to the Prime Minister's office in finalizing the report and in recommending nex steps.

The report examines the causes and effects of the repeater problem and studies possible alternative future action in a comprehensive fashion which is unusual in educational planning history in Korea. It also used a participatory mechanism which gave all interested parties a chance to present their points of view, thus assuring that there would be broad-based support for the recommendations.

The recommendations, in brief, suggest better utilization of present higher education facilities, gradual expansion of facilities as well as expansion to accommodate some of the unemployed high school graduates, programs to increase employment opportunity for high school graduates who do not enter the university, programs to increase vocational and technical training through the Office of Labor programs and Vocational-Technical Institutes for high school graduates, programs to encourage dispersement of high school graduates to possible employment outside Seoul, increased vocational and technical emphasis in middle and high schools, better vocational counseling, establishment of employment job information centers and guidance systems for repeaters, better licensing systems for certifying vocational skills, and more industrial investment in training activities. Certain suggested social policies include greater emphasis on employment-generating investment in government planning; abolition of higher education degree requirements for certain jobs where such education is not needed; decrease in differential between salaries paid college graduates versus high-school graduates; and a new youth welfare policy.

Even before the recommendations had been officially adopted by the government, there were a number of suggestions in the report that influenced government policy. For instance, the number of additional spaces to be added in universities during the current plan period (1977-1981) has been upped from 2,300 to 5,000. The secondary and university entrance examination systems are undergoing changes, and the university will give weight in the future to recommendations of the high schools as well as to the scores on the entrance examinations. Those who take the university entrance examination more than three times will be discouraged from further attempts.

Public support for the recommendations of the study is evidenced by a clear recent trend among employers who are increasingly hiring high-school graduates to fill posts available until recently only to those with more advanced qualifications. If this trend becomes marked, it will, of course, ease the problem of unemployed high-school graduates, but it may only postpone the problem by deferring it to the level of university graduates unless the current pattern of economic growth that creates more professional job opportunities is continued.

On July 21, 1977, the policy recommendations developed by KEDI were officially reported to the executive branch of the national government. Following extensive discussions and study, appropriate revisions were made reflecting the viewpoints of implementing agencies, such as the Ministry of Education and others. Following the adoption of policy guidelines by the government, a task force was established in the Ministry of Education with the responsibility of carrying out the tasks required for complete implementation.

Compulsory Education. Government policy is to gradually introduce compulsory middle-school education during the remainder of the current five-year plan

(1977-1981) and during the next five-year plan (1982-1986). By 1986 it is assumed compulsory middle-school education will be a fact.

KEDI was asked in late 1976 by the Ministry of Education to undertake a two-part study to guide in the implementation of the new middle school policy. The first part of the study identified what must be done during the current five-year plan to lay the groundwork for the implementation of the new policy. The second part of the study detailed the specific measures necessary during the next five-year plan (beginning in 1982) in order to extend compulsory middle school education throughout the country by 1986. Other studies, such as the cost studies described above, and the equalization study, described below, fed useful data into this study.

A part of the study undertook international comparisons, examining the situation in other countries comparable to Korea. Recommendations took into account experience elsewhere but recommended steps which are appropriate in the cultural and economic context of Korea.

The study found that there are in 1978 about 89.4 percent of middle school-age children in school, and if present trends continue, about 98.5 percent would be in school by 1984 with no change in government policy. However, there is great disparity in middle school facilities between urban and rural areas, and there is some indication that families who can provide for supplemental expenses and materials give their children an advantage over children of poorer families. Compulsory education would step up the numbers attending middle school, but would also imply that the government should pay for most of the costs for all children

Furthermore, the study points out that compulsory middle school education should be accompanied by: improved elementary education (including some reduction in the current class size averaging about 60); introduction of compulsory pre-school education; reduction of class size in middle school (some classes now contain as many as 70 students); improved teacher education; improved science instruction; and other improvements in the total system.

Eight alternatives for achieving compulsory middle school education and related system improvements are suggested in the study, with each alternative costing additional funds, but with no alternative costing more than 25 percent beyond present costs. Even this figure, of course, may cause problems since there are various government regulations concerning the amount of public expenditure which may go into education. The 1968 Local Educational Finance Law specified that 12.98 percent of domestic tax be given to financing local elementary, middle, and secondary education. In fact, these funds were not available for some time after the oil crisis of 1973, and there is now a reconsideration of the percentage which should go to education.

Currently, 8.7 percent of the domestic income tax is invested in education. If the government moves rapidly toward compulsory middle school education, it is likely that even more than the former 12.98 percent would be needed to finance the total package, at least in the early years of implementation, although after four or five years, economic growth estimates would indicate that there would be a surplus in the education budget if 12.98 percent of the domestic tax were available to the system.

As of mid 1978, KEDI recommendations had been studied by a task force appointed by the Ministry of Education, which had reported back to the Minister. By late summer, the Ministry will report its recommendations to the Economic Planning Board.

In the meantime, KEDI is recommending a pilot project within which compulsory education would be introduced on Cheju Island, in order to concretely see what the problems and costs would be. Such an experiment was undertaken in Taiwan in the period when compulsory education was being studied. If this proposal is accepted, KEDI will begin the pilot experiment in 1979.

This study differed somewhat from the Repeater Study, described above. All segments of the society are in agreement that compulsory education at the middle school level would be a good idea, but there must be a decision made on political and economic considerations. The repeater problem, on the other hand, was a major social problem which needed to be resolved, with political and economic interests subsidiary to the social issues. Clearly, KEDI has demonstrated its ability to handle both kinds of educational policy studies.

High School Equalization Policy. In 1974, high school entrance examinations, through which students would compete for the school they wished to enter, were abolished. This policy applied equally to public and private schools, and even the private schools lost their ability to select their students. All secondary school applicants are now assigned on a more or less random basis to available places in the public and private high schools of their regions, and the individual schools are further restricted from any ability grouping of students within the schools.

This policy has caused considerable controversy. Those in favor of the policy feel that it has equalized secondary school opportunity for all children by randomizing the high school population in each region and within each school. Those against the policy feel that it has lowered the quality of Korean secondary education to the lowest common denominator. Private schools have been the hardest hit since the new policy was accompanied by a second policy which prohibited private schools from charging more than the fees charged by public schools. Many of these private schools have made the case that they cannot maintain quality of education under these conditions unless they receive government subsidies. Fees charged at public schools, of course do not cover all salaries and operational expenses, much of which is paid by the government.

KEDI undertook in 1977 a study of the complex issues involved in the above controversy. Excluding the financial issues mentioned above, the substantive policy issue was clearly whether Korean high schools should group students by ability or whether they should follow the "equalization" policy of heterogenous, random placement.

The first phase of the project was completed by early 1978 and consisted of a study of the apparent problems in the implementation of the equalization policy. Surveys were undertaken of 10 Provincial Boards of Education, 46 academic high schools, 48 vocational high schools, 38 middle schools, and eight colleges.

The survey clearly showed that in terms of national averages, school achievement had not been affected by the new policy. However, aggregate achievement in individual schools changed markedly. The private schools which were originally highly selective have found that aggregate levels of achievement are down, and the public schools, which were formerly less favored by the elite, found that their aggregate achievement levels were up.

Such random mixing of students, however, does appear to raise questions relating to ability grouping within individual schools. The KEDI study suggests that such problems be resolved on a decentralized basis by each school, and that special work be given both to those who need remedial help and those who can move faster than the rest. The report also suggests increased use of peer tutoring (fast students helping slower ones); new teaching materials which provide opportunities for both slow and fast students; and more subjects for the faster students.

The study also suggested changes in the administration of the examination for admission to technical high schools. This examination is administered before the examination for admission to the general, academic high school, and those who fail it, then apply for admission to the academic high school. Since there are unfilled spaces available in technical schools, the study suggests a more liberal admissions policy, allowing as many to enter as there are spaces.

A number of other recommendations are made concerning the improvement of school achievement, including the establishment of provincial boards of school achievement management, and the improvement of teaching and learning methods and materials. Future studies, during 1978 and 1979, will analyze the results of the Preliminary College Entrance Examination, to see the effect on scores of the equalization policy; will study the integrated (comprehensive) high school; will develop pilot remedial learning modules for secondary education; and will refine recommendations made thus far for the improvement of secondary education.

Again, KEDI has entered a highly controversial field where public support and confidence is essential. As data from these studies are analyzed, it is assumed that KEDI will convene a broad spectrum of community, government, and business leaders to discuss their implications.

H. Education Planning Studies and Activities

Overall economic and social planning in Korea is coordinated by the Economic Planning Board. Policy guidelines, with additional analysis usually prepared by the Korean Development Institute, are distributed to the various

Ministries by the EPB, and each Ministry then prepares a plan which is reviewed by the EPB. Modifications are usually negotiated when a Ministry's plan is too costly or does not match policy priorities.

Within the Ministry of Education, educational planning has a spotty history. In the late sixties, the Ministry attempted a long-range plan for 1972 to 1986 with the assistance of foreign experts. The general reaction now seems to be that the plan was a good but idealistic report, prepared with little or no involvement of sections chiefs or provincial offices of education. It was largely ignored in terms of implementation.

Following this attempt, the Ministry asked all municipal and provincial boards of education to prepare a five-year plan for 1972 to 1976. Only one or two boards responded, probably from lack of knowledge as to how to go about a planning exercise. The 1972-1976 plan, therefore, was a simple projection of what the Office of Planning and Management of the Ministry thought would be needed to further expand the educational system along traditional lines. In large part, the plan was an attempt to satisfy social demand for education.

In 1975, the Ministry of Education was again asked by the EPB for a draft of their plan for 1976-1981. With a small staff of professionals fully occupied with day-to-day management matters in the Ministry, the Office of Planning and Management felt that it needed outside help in the development of the plan, and the Ministry turned to KEDI.

The draft guidelines for the fourth five-year economic development plan, issued in June 1975 by the Economic Planning Board, and elaborated in a confidential ("not to be quoted") discussion paper issued also in June 1975 by the Korean Development Institute clearly showed the concern of the government for stress on technical and vocational preparation, on community development and non-formal education, on population education, and on finding ways to reduce the cost burden of education to parents. Similarly, statements by the President of the Republic pointed to the need to conceive a Korean education uniquely suited to the culture of Korea. It is around these concerns that KEDI initiated its educational planning activities (and, indeed, some of the basic studies described in earlier sections, above).

The fourth five-year plan (1977-1981) was then being developed by 22 working committees scattered throughout the sectors, including several inter-sectoral committees in education, population, manpower, and other areas. Each sector had an overall coordinating committee. KEDI representatives were already affiliated with a number of the more significant working committees. KEDI proceeded to establish a working committee of all section chiefs in the Ministry supplemented by distinguished educators outside the Ministry and, in a period of several months, developed a draft five-year plan.

Since the plan was developed by KEDI as a one-time activity, KEDI had to "make do" by assigning its staff to the task in the hopes that its cumulative experience (and that of the section chiefs of the Ministry) would substitute for the kinds of continuous data collection activities that usually provide information for plan development. The plan was thus heavily biased, as noted by the EPB, toward the social demand concerns of providing more education regardless of other economic trends or plans. The plan tended to be a collection of activities which the various section chiefs in the Ministry felt would be appropriate if the funds were available, rather than an overall strategy which orients the activities of the various sections and programs of the Ministry. Furthermore, there was little or no economic analysis in the plan, nor any attempt to show how Ministry of Education programs relate to training activities of the Office of Labor or of industry and business.

Second, the planning group was working with inadequate information on what is actually happening within Ministry of Education programs now. As a result, KEDI has recommended the establishment of a management information system within the Ministry so that such information is continuously available, not only to help in plan formulation, but to help in providing feedback on plan implementation. So far, it appears, this recommendation has not been acted upon by the Ministry, perhaps because of lack of funds.

Because of inadequate information and analysis, one of the key recommendations in the first draft of the current plan was rejected by the Economic Planning Board. This was the recommendation that middle school education be made compulsory throughout the country by 1981. The EPB suggested a more gradual implementation of this recommendation in order to soften the cost implications. They proposed instead a gradual expansion of middle school educational facilities during the fourth plan (ending in 1981), but postponing compulsory middle school education until some time during the fifth plan, beginning in 1981. EPB placed emphasis on expansion of facilities in the rural areas so as to contribute to a general goal of better income distribution in Korea. The issue of compulsory middle school education has not, as yet, been resolved, and, as noted above under policy studies, KEDI, has proceeded to further examine the matter in order to have better data available concerning possible strategy choices in the future.

KEDI had barely completed its work on the fourth five-year plan when the Korean Development Institute asked (in 1977) the various sectors for elements of a long-term, 15-year plan. KDI and the Ministry of Education agreed that KEDI should prepare the draft of this plan to be considered by the Ministry of Education and transmitted to KDI. More or less simultaneously, the ruling

Congress Party requested KEDI to suggest guidelines for the education sector's portion of the 15-year plan. Thus, although KEDI had no programmatic funds for educational planning activities and had no authorization from the Ministry or the Government to undertake continuous planning activities as a permanent part of its structure and function, it had, by 1977, established itself as the institution to which the Ministry of Education and the Economic Planning Board (and the Korean Development Institute affiliated with the Board) turned for help in both short- and long-term planning activities.

The EPB incorporated elements of KEDI's suggestions in a broad, 15-year economic and social plan issued in late 1977, and KEDI embarked on a more detailed study on comprehensive educational planning, to be completed in the summer of 1978. The study is evaluating the contribution of education to national development for the past 30 years; exploring mission objective and tasks of education in relation to national development; undertaking a comprehensive analysis of the problems and current status of education; exploring basic policy directions and tasks; identifying specific tasks and criteria by educational level and subject area; identifying strategic studies needed in the education sector; and projecting resource requirements for the long-term development of education.

The study examines various alternative patterns and examines the resource requirements and the positive and negative features of each. For instance, if class size is reduced, this will require more teachers. How much will they cost and where will they come from? What other variables in the system will be affected (school buildings; school facilities; equipment and materials; etc.)?

Results of this study will be distributed, probably in book form, tentatively entitled Perspectives and Policy Tasks for Educational Development in Korea, in time for the opening of Congress in August 1978. It is expected that long-range educational perspectives and resources allocated to education will be a major issue in this legislative session, and the ruling Congress Party will depend on the KEDI study for basic information needed for decision making and legislation. A summary of the plan as developed by KEDI and submitted to the government in late 1978 has been placed in the Appendix.

I. International Cooperation and Linkages

In the relatively brief period KEDI has been established, it has developed a remarkable network of international relationships which both benefit KEDI and which enable other institutions to profit from KEDI's experience. KEDI maintains a continuing program of short- and long-term training experiences of its staff at other institutions around the world, accepts interns and observers from other institutions at KEDI, does studies for other institutions, participates in studies those institutions are doing, hosts international seminars, participates in international seminars and workshops elsewhere, undertakes research studies for international agencies, is cooperating with at least one international institution in television production, and has recently been called on for advice on educational development problems in two other countries.

KEDI has been active in collaborative relationships with the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and with international and regional institutions affiliated with UNESCO. KEDI, for instance, has been designated by the UNESCO National Commission in Korea as Korea's liaison with the Asian Center for Educational Innovation and Development in Bangkok (ACEID). Ewha University, the Ministry of Education, and Seoul National University also participate on the Board of National Development, affiliated with ACEID. KEDI hosted a regional science education seminar sponsored by ACEID in July 1975, with participation on the part of consultants from the National Center for Educational Research and Training, Delhi; the Science Education Research Center, National Institute for Educational Research, Tokyo; University of Malaysia, Kuala Lumpur; Science Education Center, Philippines; Ministry of Education, Singapore; University of Sri Lanka; ACEID's specialists from Bangkok; and various university science specialists in Korea and in the Ministry of Education in Korea. KEDI has accepted several contracts from ACEID for research studies and seminars , reports of which have been disseminated throughout the Asian region. The first contract was for a national inventory of educational innovations in Korea (August 1975 report in two volumes); the second was for a national seminar on educational innovations held in May 1975.

Subsequently, KEDI acted as host for the ACEID-sponsored High Level Personnel Exchange Workshop in Curriculum Development (August 2-10, 1976), which drew participants from Sri Lanka, Malaysia, Philippines, Singapore, and Thailand. In September 1977 KEDI hosted a preparatory meeting to plan the UNESCO-sponsored regional meeting of Ministers of Education and of Economic Development, to be held in Sri Lanka in August 1978.

In late 1976 and early 1977, KEDI prepared for ACEID seven case studies dealing with: (1) industrial arts in Korea; (2) the learning skills development project for disadvantaged middle school students; (3) the mastery learning project in Korea; (4) the development of the Air and Correspondence High School;

(5) the Elementary-Middle School Project; (6) the vocational training project in Korea; and (7) Saemaul (New Community Movement) education in Korea.

KEDI has sent participants to a number of ACEID and other UNESCO sponsored regional meetings and training courses, and through these meetings has established good continuing communication with other educational planning, research and development institutions in the Asian region. Among such meetings attended by KEDI staff were the following: (1) the Third Group Training Course in Educational Planning, Bangkok and Manila, 1976-77; (2) Advanced Level Workshop in Education for Rural Development (Iran, August 1977); Regional Training Course in Educational Media (sponsored by UNESCO's Asian Institute for Broadcast Development, Kuala Lumpur, August-September 1976), etc.

A number of training courses and meetings sponsored by other organizations in the region have included KEDI participants, including the following: (1) a four-month program on Cross-Cultural Research for Behavioral and Social Scientists (Cultural Learning Institute, East-West Center, Hawaii, January 5 - April 30, 1977); (2) Group Training Course in Correspondence Education (New Zealand, September - October 1976). KEDI has also sent specialists to participate in a number of seminars and meetings sponsored by the International Institute of Educational Planning in Paris and the International Bureau of Education in Geneva, both organizations under UNESCO.

KEDI has sent staff for short-term training of up to several months to the Japan National Broadcasting Corporation, NHK; two KEDI staff were trained for three months under the Colombo Plan in Australia in 1972; two KEDI staff spent three months in West Germany in 1975; from 1973 to 1978 over two dozen KEDI staff have spent from three months to one and one-half years at Florida State University for training in instructional design, television production, and management systems; two staff members attended a one-month seminar on population education at the East-West Center in Hawaii in 1972; four KEDI staff were trained by AMPEX in video-tape techniques and educational broadcasting for short periods in the United States during 1973-75; and two KEDI staff attended a one-month course in educational management sponsored by ACEID in Indonesia in 1975. KEDI staff have spent time studying British Broadcasting Corporation's educational activities in Britain, and BBC has sent visitors to KEDI to study the KEDI operations. Finally, KEDI hosted a seminar on education and communications, funded by the United States Information Services, in July 1975.

KEDI has also participated in the activities of INNOTECH, sponsored by the Southeast Asian Minister's Organization (SEAMEO), now located in Bangkok, and KEDI is a member of the International Curriculum Organization, located in Paris. The ICO consists of 16 countries and groups within those countries with common interests undertake a variety of collaborative activities. KEDI has helped develop a curriculum evaluation handbook and has worked with ICO in developing an International Curriculum Workshop which was held in Indonesia in 1976.

KEDI maintains a cooperative relationship with the Center for Production and Training for Adult Education Television (CEPTA-TV) supported by the German Foundation in Singapore. Two KEDI staff members have been to Singapore twice for one- to three-month training sessions and KEDI is currently involved in a continuing collaborative television production project to produce community education films in areas useful in Korea.

KEDI staff either formally or informally assists many international study teams when in Korea. For instance, the Director of the Bureau of Policy Research was the key liaison for the Government of Korea in the World Bank Sectoral Study Team which visited Korea in November - December 1973 and which issued a report in May of 1974 entitled, Educational Services in a Rapidly Growing Economy. In late 1977, a Professor Groothof of the University of Cologne, headquartered at KEDI to gather information on the Saemaul Movement, community education, and KEDI's vocational education projects. Professor Groothof is working on a proposed reorganization of adult education in Germany, and he wished to compare Germany's experience with that of Korea's.

As KEDI's reputation has spread and as its competence has matured, it is beginning to receive requests from other countries for assistance in resolving educational problems. KEDI staff advised Afghanistan to educational development problems in the mid-seventies; in cooperation with Korean Development Institute staff, KEDI staff have been involved (in 1977 and 1978) in helping Saudi Arabia plan a vocational training scheme for the Yanbu and Jubai areas; Indonesian Ministry of Education officials have approached KEDI (1978) to explore possible KEDI collaboration in further development of Indonesia's educational technology work and the national Curriculum Development Center.

There is no doubt that these many collaborative activities have contributed and are contributing to the technical competence of KEDI and to the image of KEDI as an internationally credible research and development agency. Although much of the original staff training for KEDI was undertaken by Florida State University under the AID contract for the Elementary-Middle School Project, KEDI has broadened its staff competence through a variety of elaborative activities with institutions throughout the world. It has similarly been willing to make its own experience available to others.

Questions for the future revolve around KEDI's ability to integrate these various collaborative activities into a coherent program with a philosophy and an approach that has validity. KEDI must also carefully examine its capacity to train others and to offer consultant services to others outside Korea without detracting from its internal mission and responsibilities.

J. Internal Linkages

As KEDI has expanded its basic, policy and planning studies and its curriculum development programs, it has increasingly functioned as the research arm of the Ministry of Education, much as the Korean Institute of Science and Technology and as the Korean Development Institute serves the Economic Planning Board. This has meant that KEDI must relate in various ways to virtually every other education institution, to many other government departments in various ministries, and to private organization in Korea.

Specific programmatic relationships as part of specific KEDI projects are discussed in the context of those projects elsewhere in this report. Many of these relationships are in the form of sub-contracts with universities and other institutions and individuals to undertake portions of projects which have been commissioned to KEDI by the Ministry of Education. In this way, KEDI is becoming a channel for more and more Ministry of Education research and development funds.

It is conceivable that KEDI may in the future assist the Ministry in developing overall research and development strategies and in coordinating and supervising the disbursement of research project funds to institutions throughout Korea. Although KEDI has demonstrated astuteness in drawing on institutional resources elsewhere in Korea in the conduct of its various projects, neither the Ministry nor KEDI has yet fully conceptualized the long-range potential of a possible continuing research-coordination function by KEDI.

In its various planning and research activities, KEDI maintains formal and informal relationships with such institutions as the Korean Institute for Research in the Behavioral Sciences, the Korean Development Institute, the Korean Institute for Science and Technology, the Economic Planning Board, a number of universities, the New Community Education Program coordinated by the

Ministry of Home Affairs, agricultural development activities of the Ministry of Agriculture, and youth development activities of the Ministry of Education. In addition, relationships have been established with the Korean Federation of Teacher Associations, the Korean Association of School Administrators, and the National Society for the Study of Education. KEDI also has had collaborative activities with private organizations such as the YMCA, the YWCA, and the Government-supported Boy Scouts and Girl Scouts. At least 40 KEDI researchers hold memberships in one or more educational and professional associations in Korea and regularly present papers on KEDI work at the meetings of these associations. KEDI also provides internship experiences for seniors of Seoul National University and Ewha Women's University.

A rough tabulation of service activities during an early three-year period (1973-1975) shows that KEDI sent staff to participate in at least 24 in-service training activities conducted by other organizations; conducted about 70 seminars and workshops of its own for various clientele in the school systems, universities, and the community; provided at least 142 consultants to schools and universities; prepared at least 33 substantial reports on educational problems at the request of other institutions; and sent people to attend at least 45 school and university meetings of one kind or another. Some of these activities, of course, are in conjunction with funded projects, but many are not. Since 1975, such activities have intensified even more until it is difficult to even obtain an accurate tabulation of them. Such activities are simply considered a regular part of each and every project and program at KEDI.

A major new governmental organization, the Academy for Korean Studies, was inaugurated in July 1978, whose broad goals include research on educational policy. The relationship between this institution and KEDI is as yet unclear, although good staff communication exists between the two groups. It is likely that some of the earlier philosophic and historical interests of the KEDI basic studies program will be subsumed by the new Academy and KEDI will concentrate of basic and applied studies of a more empirical nature.

K. Publications and Information Control

KEDI has generated an impressive list of publications from its inception in 1972 through June 1978. A complete list of these publications appears in the Appendix.

The early publications program was run on an ad hoc basis, with little planning. As the program became more complex, publication and dissemination problems also increased. In late 1977, KEDI established an editorial committee which now must approve all new titles and which will review and approve of all manuscripts.

Most of the KEDI research reports, books, and other materials are published in small quantities (a few hundred to a few thousand copies), although the numbers have been increasing slightly over the years. Those interested in receiving KEDI materials are encouraged to subscribe to a reprint service, though which they receive the materials produced by KEDI at printing cost. Regular publications include Educational Development News (issues 1-30 had been published by March 1978); Field Research (23 issues had been published by April 1978); Korean Education (a research journal of which six issues have appeared through 1977); and an Annual Report in Korean and English (six issued through 1977). In addition, 64 research reports have been issued, most in 100- to 2,000-copy editions; 22 books; seven research memos; a variety of teacher-training handbooks and manuals; demonstration curriculum and testing materials for the Elementary-Middle School Project, the Skills Training Project, the Population Education Project; manuals for the Air and Correspondence High School; and a number of informational brochures on the Institute.

Although some of the text materials and several of the books have been published in cooperation with commercial firms, most of the research and technical reports have been published by KEDI and distributed free. Educational Development News is published bi-monthly in editions of 5,500 copies, up from an original edition through December 1974 of 1,500. The Journal of Korean Education, theoretically published four times a year as of July 1978, was last published in June 1977, in an edition of only 500 copies (down from an original edition through 1976 of 1,000 copies). A subscription system had been planned to cover the high cost of this scholarly journal, but the number of potential subscribers does not seem to be adequate to support the effort.

It can reasonably be assumed that the small editions of research reports and larger editions of materials published by commercial publishers, including some of the KEDI-developed books, reach many key people in Korea. However, the fact that most are given free makes it difficult for KEDI to increase the quantity of the editions sufficiently to provide for any depth of readership. The organization must further examine ways of generating income from publication sales (or of getting publication subsidies) in order to make available larger editions of materials to be able to keep the materials in print over a period of time.

One possible source of income ultimately could be the commercial marketing of the curriculum materials being developed by KEDI. However, there is concern within the government that parents are now required to spend too much money on instructional materials, and, if KEDI materials are substituted for existing materials, a plan must be found to make certain that the total cost to parents is not more than they now pay and preferrably less. Preliminary KEDI studies seem to indicate that KEDI packages would not only offer higher quality instruction than existing materials but could also be provided at lesser cost than the range of materials that parents are now required to buy. It is understood that the various modes of publishing and distributing the materials currently are being explored.

The KEDI materials which have received widest distribution are the field research reports coming out of the field testing of the elementary school materials of the Elementary-Middle School Project. Three copies of each report have been sent to each of 6,500 elementary schools: one for the principal, one for the library, and one for the teacher in charge of research. Copies have gone to 11 boards of education, to most officials of the Ministry of Education, and to educators throughout the country. These reports include information on KEDI and materials useful to teachers and supervisors in psychology, curriculum, evaluation, and instructional techniques.

KEDI might well wish, also, to consider restructuring its research publication program around series related to broad topics of KEDI interest. Of the moment, all research studies, no matter what the topic or theme, are published as a numbered research report within a long series of such reports (64 thus far). For better public comprehension of the different research thrusts in KEDI, one could envisage splitting the research report series into several thematic groups. There, thus, might be one series on the Economics of Education in Korea; another on Basic Curriculum, Content and Methods (to include such studies as those on population and environmental education, value education, industrial arts education, etc.); and a third on Policy and Planning. In fact, KEDI is clearly developing several thematic research emphases and the packaging of the results of these emphases in clearly defined series would make for more coherent dissemination of the results of each program. Because of the major effort expended on the E-M Project, reports relating to this effort might well be a separate series.

L. Research Information Control

As KEDI continues to expand its research effort and as it move more heavily into policy and planning studies, it must find more efficient means of gathering, coding, storing, and retrieving research information and educational policy data. The Korean Science and Technology Information Center (KORSTIC) has developed a computer-based information storage and retrieval system in the science and technology area and KEDI would like to extend that system to the education area. As a first step in cooperation, KORSTIC and KEDI have agreed to jointly publish a guide to the contents of current journals in education, science and sociology. The first edition of this guide lists little more than the table of contents of journals (mainly foreign) available in Korea, but it is a good first step.

KEDI is proposing the purchase of a computer to be used in the conduct of research studies and in management and administration. Hopefully, such a computer will have the capacity to be used, also, for the various kinds of information and research data storage and retrieval.

There appears to be no one specialized in these problems at KEDI. This is a sophisticated area in which KEDI should train or recruit staff and undertake soon a serious effort to develop appropriate systems and services. Considerable lead time is necessary before such systems can be operational, and the longer a decision to begin a serious effort is delayed, the more complex the task will be.

M. Conclusion

One can only conclude that KEDI is maturing in its role as an educational policy and planning and research institution. The long-term significance of the role for Korean education is certainly equal to the significance of the curriculum research, development, and delivery work of the Institute. In fact, many of the more critical areas of curriculum reform will increasingly depend on results of the policy studies for their conceptual framework (i.e., value education, population and environment education, vocational and technical education, sex role biases, etc.).

Several groups of projects in the basic studies, policy and planning areas are developing into continuing programs. This trend is accelerating as more substantial resources, both financial and human, are allocated to KEDI-initiated policy and planning studies. Of the moment, however, many KEDI-initiated studies are underfunded and understaffed. Studies requested by outside agencies often (although not always) bring funds with them and tend to be better staffed.

There must be an attempt on KEDI's part to establish a good, continuing program of policy, planning,and basic studies, with continuing data collection and analysis activities that will form a kind of cumulative wisdom, useful in dealing with new policy questions as they arise. In essence, KEDI must keep ahead of the next crisis, rather than reacting to each crisis as it comes along. Urgently needed is a good educational research information, storage, and retrieval system. First steps with KORSTIC may develop into such a system.

KEDI appears to be collaborating well with universities and research institutions elsewhere in Korea. Personnel of these institutions are invited to participate in KEDI projects, and to some extent KEDI contracts out portions of its work. Certainly, KEDI should have a continuing core program of in-house research, but it should also see as one of its goals the encouragement of other research institutions in Korea, both from the point of view of using available human and institutional resources, and from the political view of establishing KEDI as an institution which does not attempt to co-opt all research funds in Korea.

So far, KEDI seems to have established a nice balance between basic and applied research. Researchers, even doing basic studies, appear to keep the "so what" in mind. Many projects include a product component; in essence, a pilot set of teaching materials, a teacher's manual, a series of teacher training workshops, or what have you. Where needed, a basic research study is done to form the intellectual base and conceptual framework for a project (i.e., the studies on principles of attitude and value change).

The KEDI publications program is impressive. Additional funds are needed for larger editions of many studies, but the new subscription service may help in meeting requests for out-of-print publications. The new Editorial Committee which must review and approve all publication is a step in the right direction. This will assist in maintaining quality control and will be helpful in developing a coherent publications plan.

External relationships are healthy. KEDI is becoming well-known internationally, and this contributes to KEDI's sophistication since KEDI staff keep well-informed of international developments relevant to its work.

In essence, KEDI's policy planning and basic studies program is asking the right questions and collecting the right information so as to assist authorities in educational decision-making. It is also acting as mediator between the government and the aspirations of parents and the various Korean communities. To the extent that it can keep ahead of the various crises in educational development in Korea, possibly to the point where many of these crises can be averted, KEDI will establish itself as in irreplaceable educational policy, planning, and basic studies agency.

CHAPTER X

A PLAN FOR SELF-ASSESSMENT AT KEDI

A. Introduction

This chapter represents an attempt to create a scheme for viewing, over time, organizations which are charged with bringing about change in public sector establishments. Specifically, using the Korean Educational Development Institute as case in point, this discussion proposes a scheme for understanding and explaining the corporate and programmatic behaviors of a research and development operation in the education sector.

Throughout the world, research and development centers have been and are being created. In general such centers attempt new applications of theory to educational problems. Their real reason for being is to gather existing evidence, invent new mechanisms, procedures, and materials; and to cause the larger system to adopt those inventions and to diffuse them rapidly. In order to best serve, they may do basic research. Their power to cause change comes from the persuasive quality of their inventions and syntheses, the capacity and receptivity of the larger system for utilizing inventions and syntheses, and the general economic capacity required for diffusion.

Research and development functions first achieved sophisticated levels in industry as scientists were put to tasks associated with new product and process development. If an invention proved practicable and market research suggested future profits, the company involved had the power, in itself, to cause the changes called for to occur and to produce the changed or new item. The general public has no input to such a process, and cannot alter the product once it comes into the purchaser's hands. Similarly, the workers who manipulated materials, using predetermined process standards and behaviors, cannot materially influence the nature of the outcome.

Research and development operations in education, as separate organizational entities, received special attention in the '60s. Although educational research was an old and more or less honored tradition, there was a growing impatience regarding the impact of research on practice. Too, research was traditionally limited to learning research with psychology as the basic discipline.

In the U.S. the impatience was parallel in time to a growing involvement of the Federal Government in education. Those two factors resulted in action on the assumption that well-funded autonomous research and development operations would involve more basic disciplines in educational research, by-pass schools of education, and provide the synthesis needed to cause specific innovation in educational practice. Thus a series of research and development centers was created, each with a different emphasis, throughout the country. They were, and are, attempts at intervention in the general system of education. They have no power--certainly no authority--to assure that their inventions are utilized in schools. Nor do the political units at state and local levels have sufficient authority to do so. Therefore, the outcomes are difficult to legislate into practice. Even more critical, in terms of relative position to industry, are the following: (1) the general public has a long-standing set of assumptions and opinions about education and is important in the change process; (2) the practitioners in education, unlike the workers in industry, are potent interpreters of new products and processes at implementation levels; and (3) the direct consumers of education--the students--can absorb and manipulate the substance of innovation and change in an infinite variety of ways and to widely varying degrees.

In recent years many countries have created research and development centers in an effort to speed up change in education toward greater access to the system, improved materials and delivery systems, and greater efficiency. Again one finds disaffection with existing professional training institutions and with those bureaucracies responsible for education and for the assumption that research and development units will cause change. Such centers tend to be less autonomous than U.S. counterparts and more tied into the system's political authority structure. Therefore, it is theoretically possible, given an effective research and development outcome, for the central government to decree the diffusion of the product or process throughout the system in a short time. Even in such centralized systems, however, the public still has certain expectations, the practitioners still can interpret the change differently than intended, and the direct consumer may or may not utilize the results.

Such centers, particularly in emerging nations, are in interesting positions. They, themselves, are interventions into traditional systems. They may be offensive to universities, they may shock public understanding of how education looks and behaves, and they may threaten the careers of vast numbers of practitioners.

The research and development operation in a centralized system, then, must behave within a complex structure of authority, power, and expectations. The political entity (the government) represents the authority to effect change, the practitioners hold the power to render change ineffective, and the expectations of the society range from the traditional to the utopian.

KEDI, to be an effective instrument in the improvement of the educational system, must ultimately influence all three. Its efforts at self-assessment may need to emphasize the process of influence even more than the results of specific program endeavors. The attempt here will be to create a professional-political scheme for self-assessment--a way to systematically view the corporate behaviors of KEDI.

B. An Approach to Development of a Self-Assessment System for KEDI (Criteria of Success)

The literature on educational administration and evaluation produces many models which contain the elements which must be included in the development of criteria of success. In general, administrative models place the organization within a societal context,and the organization's survival and legitimacy are assumed within that context. Emphasis tends to be upon the skills administrators develop and bring to bear upon the classic identification of processes associated with administration--planning, decision-making, communicating, organizing, and the like.

Evaluation models, except for the normative and conventional wisdom efforts associated with accreditation and bureaucratic approvals, come from efforts to assess individual programs. Although the models can be used at institutional levels, they become somewhat bulky when applied to complex, multi-program situations.

Efforts at development of a body of theory around institution building concepts have also been useful, particularly in accepting the value of understanding philosophical and political forces and their impact upon organizations.

All of these contribute to this attempt, and elements of each are found in conceptualization in this paper. In the interests of serving KEDI, however, an effort is made to relate relevant theoretical and empirical work to a developmental and managerial situation unique to KEDI.

Because the attempt here is to find a systematic approach to organizational self-assessment, the criteria are related to those levels within the organization at which information is utilized for decision and control purposes above program levels. The rationale for that limitation may be seen in the following statement of assumptions.

1. Organizations (institutions) exist in education to allow and encourage optimum order and effectiveness in the delivery of services within a general philosophical and goal framework.
2. Any organization, then, will be accountable for delivery of those services for which it accepts responsibility within its existing and evolving mission.
3. Administrative-management structure and people exist in order to assure: (a) the survival of the organization so that service delivery is possible, (b) professional legitimacy so that the services delivered are valuable, (c) the presence, development, and appropriate allocation of all resources required for delivery of services.

Given those assumptions, a system for KEDI self-assessment as an operational organizational actor on the Korean educational scene should assure attention to the following categories of evidence:

1. Legitimacy Criteria
2. Management Criteria
3. Planning Process Criteria
4. Product and Services Outcomes

Those categories will form the general headings of the Criteria of Success plan. Each of the categories should be viewed in two ways: (1) in relationship to its environment and (2) as a complex operating entity.

KEDI as Institution in Korean Society

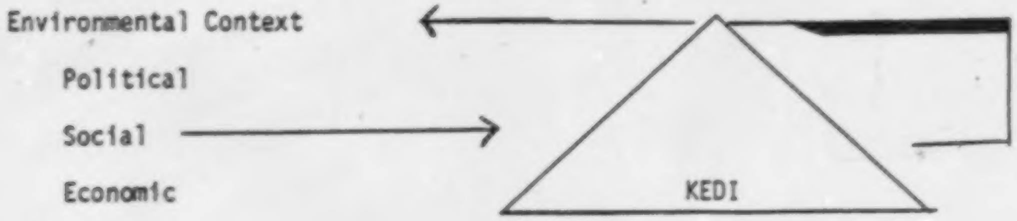
Because KEDI exists to respond to and cause change in education, assessment criteria must include items about how it relates to its environment. Relevant data about that environment might be categorized as follows:

- Political
    - General national political climate
    - Institutional interface with political units and agencies in government
    - Institutional interface with other educational institutions and groups
- Social
    - Educational expectations of the general society
    - Social priorities of the people
    - Diversity of ethnic, linguistic, geographic, and economic origins
- Economic
    - Gross measures of economic wealth and growth
    - Economic commitment to the education sector
    - Economic development directions

Within its political-social-economic environment, KEDI must exist and have purpose. How its leaders select and interpret environmental data and how they behave in response to it will, to a large extent, determine the effectiveness with which KEDI serves.

To this point there has been developed a fairly standard schematic for the relationship of an institution to its environment.

Figure 1



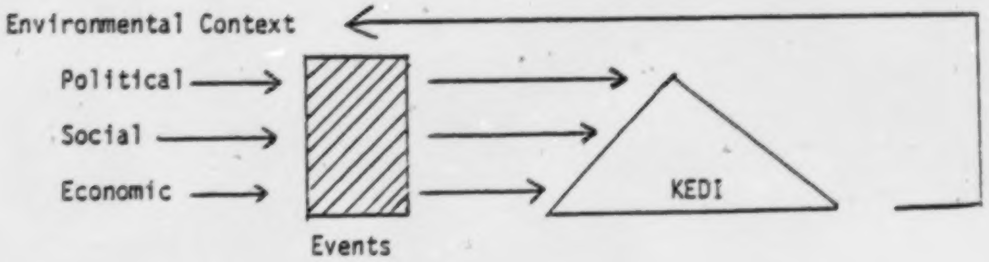
The environment contains the antecedents essential for KEDI to understand its role and to perform effectively. Environment, in this context, is defined as: the general milieu in which KEDI operates over time, in which political, social, and economic date undergo only incremental change. That is to say, aggregate societal data normally impact upon an institution in non-dramatic ways and do not create sudden dislocations of institutional mission. The data are important, as already suggested, because institutional relevancy will be judged within that context. If an institution misreads such data, or screens out disturbing data, the institution is in jeopardy.

Because environmental data change is not always "only incremental", a concept is introduced relative to the assessment of KEDI's behavior in relationship to its environment--the external event. An external event, for purposes of this paper is: any occurrence which effects, at a clearly identifiable time, dislocations of the normal flow of political, social, and economic data within which an institution exists and has purpose.

Thus, an institution must not only operate within a "normal" environment, it must also be able to anticipate events, adjust to (or combat) events, and perform legitimate roles when rapid change occurs.

To the schematic in Figure 1, then, is added an external event filter.

Figure 2



Often an event causes dislocations in a system for very short periods of time and effects can be isolated and treated. Other events may be symtomatic of larger problem/opportunity trends. And still other events may signal permanent changes in basic data flows. If the effect of an event can be observed over a long period of time it becomes a normal data input and must be used to understand the system's environment.

External events may affect aggregate environmental data which impact upon the institution. Examples could be: severe economic recession/upturn; change in government policy for socio-economic development; war or threat of war.

The event may not disturb normal flows of aggregate data but may appear in the form of pressure to include/exclude new persons, programs or processes in the institution. Examples include: ad hoc requests from MOE to assume tasks; AID's support of programs for women; confusion over territorial rights with other institutions.

The latter kinds of events do not directly affect KEDI's mission as might those which change aggregate data. They tend, instead, to affect institutional internal behaviors.

To this point, emphasis has been upon KEDI's relationship to its external environment. Now, it is necessary to turn to the need to assess how it operates internally.

KEDI as Complex Entity

Although KEDI, like most research and development institutions, operates in a climate of high uncertainty and is influenced by its external environment, it must also assess itself as an organizational entity. KEDI shares with other educational institutions the feature of having a high percentage of professionals among its personnel. That characteristic suggests that a strong internal culture may provide stimuli for organizational change and shape how activities are defined and carried out.

Although reference has been made to "corporate" or "institutional" behavior, it is understood that only persons observe, analyze, and act upon environmental data within the institution. And it is people who determine the internal character of an institution. It is known, however, that the peculiar situation of a given institution is a strong determinant in the behavior of persons working in that institution. Ultimately, it is the amalgam of person behaviors which are recognizable as a corporate stance. Therefore, both the over-all scheme of self-assessment and the resultant criteria will focus upon what persons accept and respond to from environmental data, how resources are marshalled and deployed, how processes are determined and applied, and how products and services relate to institutional mission.

Examination of the institution includes attention to internal policy, organizational structures which show formal flows of authority and information, personnel function and organization, and administrative processes. Among the latter, an emphasis has been given to the internal planning process. This has been done because "planning" can include all other critical processes and provides a suitable sequential framework for assessment.

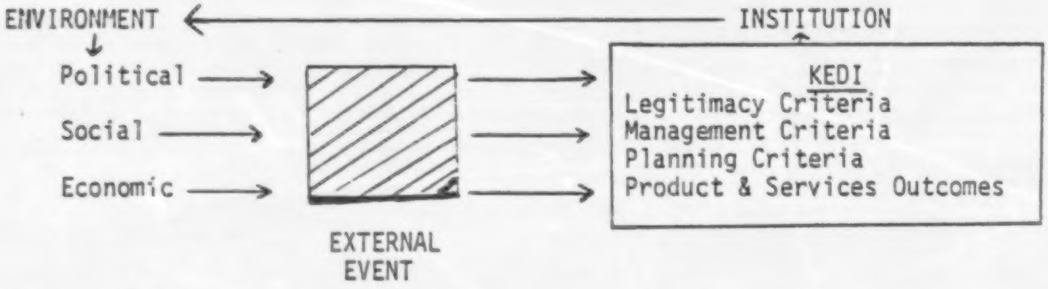
Further, in-depth self assessment must go beyond the formalized schemes of form and function and include informal relationships which affect communication channels, influence and power, and sources of motivation, dissatisfaction and contentment.

KEDI's leaders, by virtue of the unique place KEDI holds within the total education system, are in constant contact with their external environment. They must assure a balance between response to that environment and to internal requirements for stability and professional satisfaction.

The scheme for self-assessment permits one to study systematically the mutual impact of the environment-institution dynamic and/or to study the institution as functioning organism. Ultimately, of course, it is not possible to separate the two. But, for the purposes of data collection, it is essential to ask discreet questions within the Criteria of Success categories.

Figure 3, then, combines the concerns about the normal environment, external events, and the internal behaviors of the institution.

Figure 3


ENVIRONMENT
INSTITUTION
Political
Social
Economic
EXTERNAL EVENT
KEDI
Legitimacy Criteria
Management Criteria
Planning Criteria
Product & Services Outcomes

C. The Criteria of Success Instrument

The instrument, a draft of which follows, is presented for review and refinement through use by KEDI staff. While the questions may change, the instrument should maintain the following characteristics:

1. It should present an opportunity for open-ended comment by individuals for response from a variety of perspectives as well as serve both internal and external study groups.
2. It should serve as a check-list of things to attend to on the part of KEDI leaders.
3. Data collected in its application should be for internal review and interpretation by a wide representation among personnel.

One will note that the instrument does not relate Product and Services Outcomes Criteria to specific program efforts such as the Elementary-Middle School Development Project. It is assumed that data collected under Planning Process

Criteria will lead to practices in program evaluation to be applied to each program activity. Therefore, the programs will receive separate and specific attention as they develop, are implemented, and culminate in products and services. Items under the Product and Services category in this document are general only, and not intended to take the place of specific evaluation design efforts for each program undertaken.

Category I - Legitimacy Criteria

All of the questions in this section are concerned with the relationship of KEDI, as organization, to its environment.

1. Institutional Survival

    1.1 Legal Status

        Is the existing legal status considered an adequate guarantee for the near future?

        Is there need to reconsider KEDI legal status at some future time?

    1.2 Budget

        To what extent has there developed a stable, long-term means for provision of needed financial resources?

        What agencies are primary competitors for funds?

        Is there a strategy for competing for funds?

2. Institutional Mission

    2.1 Goals and Doctrines

        To what extent are goals and doctrines understood and accepted by the organization and its environment?

        Do various groups in the environment perceive KEDI mission differently?

2.2 Changes in Mission

What changes in mission have taken place?

What caused changes in mission, goals, or doctrines?

Are current activities compatible with stated goals and doctrines?

3. Government Recognition

3.1 Acceptance of KEDI

Has there been a periodic reaffirmation of KEDI mission?

What persistent strains or disagreements are there between the MOE and KEDI?

3.2 Involvement in National Planning and Policy Making

What is KEDI role in construction and revision of national plans?

Do KEDI staff participate in policy bodies at national levels?

What is the nature of KEDI interaction with "think tank" agencies in other sectors?

3.3 Involvement at Sub-National Levels

What are the kind and frequency of requests for assistance from provincial governments? Minicipal governments?

What kinds of comment, about KEDI, are made to MOE by sub-national units?

3.4 Other Interactions With Governments

What is the kind and frequency of other formal and informal communication and interaction with government?

Are there requests for assistance from non-education agencies?

4. Non-Governmental Recognition

   4.1 Media Interest

   To what extent is there coverage of KEDI activity by mass media?

   What is the nature of media coverage?

   Has media coverage changed in quantity and/or attitude?

   To what extent is coverage diffused throughout the country?

   4.2 General Public

   What is parental reaction to KEDI programs? Student reaction?

   How visible to the public is KEDI as institution?

5. Professional Recognition and Status

   5.1 Interrelationships with Professional and Academic Organizations

   To what extent do professional and academic organizations request KEDI assistance?

   What is nature of such request?

   What kinds of services are offered by KEDI?

   Are there perceived conflicts?

   5.2 Interrelationships with Higher Education Institutions

   To what extent do teacher education institutions seek KEDI assistance?

   In what areas do universities view KEDI activities as complementary? Conflicting?

   Do universities ask KEDI personnel to contribute to institutional teaching or research?

   5.3 Contribution to Professional Publications

   How frequently do professional journals request contributions from KEDI?

To what extent do KEDI staff contribute to professional publications?

How are KEDI publications received by the academic community?

5.4 Interrelationships with Teacher Organizations

Is there a system of two-way communication with teacher organizations?

What are areas of real or potential mutual support? Conflict?

Do teacher organization publications contain articles or comment on KEDI?

5.5 Interrelationships with Research Organizations

Do other research organizations/groups seek assistance or association with KEDI?

What is the nature of such requests?

5.6 Interrelationships with Schools

How familiar are teachers and administrators of the public and provide schools with KEDI programs and purposes?

What is the demand for KEDI products?

What is the demand for visits by KEDI personnel?

5.7 International Involvement

What is the nature of associations with international organizations?

Who visits KEDI from what countries?

What countries consider importing the KEDI model?

6. Institutional Autonomy

6.1 Developmental Autonomy

How much of KEDI's research and development work is decided upon in-house?

To what extent does KEDI engage in basic research?

Is basic research viewed as a legitimate function? By KEDI staff? By others?

How much of KEDI activity is in response to ad hoc requests from MOE?

6.2 Operational Autonomy

Is there autonomy in recruitment and selection of personnel?

Is KEDI free to select sponsors and seek external funds?

7. External Events

7.1 Event History

In references to all previous items in this Category, what events can be identified which have altered the status of KEDI legitimacy?

Did KEDI anticipate the event?

What was KEDI prior preparation/response?

7.2 Event Future

What events *may* be expected in the future which could alter KEDI legitimacy status?

What actions may be taken to defend against or take advantage of anticipated events?

Category II - Management Criteria

The efficiency of an organization is generally assumed to the management of resources. The pressures of deadlines, the competing demands on time of individuals, and the possible tensions between bureaucratic and professional styles combine to make the internal management of KEDI sensitive and demanding.

1. Internalization of Mission

   1.1 Role Structure

   Are role descriptions compatible with the values and norms of goals and doctrines?

   Do staff associate themselves and their work with KEDI goals and doctrine?

   1.2 Rules and Regulations

   Are KEDI goals and doctrines apparent in rules and regulations?

2. Fiscal Resources

   2.1 Real Money Support

   Have fiscal resources been adequate to perform mission?

   Has the growth in KEDI fiscal support kept pace with general growth in support for education?

   2.2 Financing Strategies

   Thus far what have been the results of long-term financing strategies?

   Are there alternative strategies for the future?

   2.3 Proposal Funding

   How successful has KEDI been in having research and development proposals funded?

   From what sources do external funds come and for what purposes?

   2.4 Budgeting and Central Processes

   Is there an administrative style apparent in the budgeting process?

   On what basis are fiscal resources allocated for organizational tasks?

   Can internal approval for expending funds be obtained quickly?

3. Physical Resources

3.1 Space

Is space adequate for the current mission?

How is space allocated?

Are there problems with special purpose space?

3.2 Equipment

Is there sufficient administrative and research equipment?

On what basis is equipment allocated?

Is it necessary to use equipment of other organizations?

Is such reliance cost effective?

Are there cost-usage analyses made?

3.3 Amortization and Replacement Strategies

Is there a replacement strategy for equipment?

How was it arrived at?

4. Human Resources

4.1 Numbers

Are there adequate numbers of personnel to carry out the department and project objectives?

How is numerical adequacy determined?

4.2 Quality

Are there personnel of adequate quality to carry out the department and project objectives?

Is there an appropriate mix of specializations among the personnel?

4.3 Recruitment and Retention

Can KEDI compete successfully with other organizations in recruitment and retention of high quality personnel?

Does recruitment tend to be personalized or take place on the basis of an open and objective selection of talent?

What is turnover rate in key positions?

4.4 Training

Are there adequate resources allocated for training?

Has overseas training been adequate?

Has it been cost effective?

Is there a comprehensive training program in KEDI for research and support personnel?

Where does the basic responsibility for training lie?

4.5 Satisfaction

Do KEDI personnel exhibit pride in their work and in KEDI?

Does the behavior of personnel reflect an identification with the institution?

How is morale assessed?

4.6 Reduction and Transfer

Has there been a need to reduce or transfer personnel?

Are people placed in roles where they can make their best contributions?

4.7 Utilization

Are some researchers overused and others underused?

How is an equitable distribution of work achieved?

How extensively are outside professionals used?

Are fees sufficient to attract high quality outsiders?

Is there an attempt to utilize outside professionals from a large number of institutions?

How are the roles of the outside professionals defined?

5. Communication

5.1 Vertical

Are there vertical channels for communication in both directions?

Are these channels recognized?

Do personnel know to whom they report?

How is communication adequacy determined?

5.2 Horizontal

Are there horizontal channels for communication?

Is horizontal communication encouraged?

Does the physical location of personnel facilitate communication?

What determines channels--work roles, friendships?

5.3 Feedback

Are there identifiable channels for feedback of information on organizational performance?

Does distortion occur?

Under what kinds of circumstances does feedback occur most quickly? Most slowly? High distortion? Low distortion?

5.4 Dispersement

Is significant information pertaining to KEDI dispersed throughout the institution?

Where does isolation occur?

6. Decision Making

6.1 Distribution of Power

What is the degree of centralization of power?

What is the level of participation in institutional decision-making?

What informal power and influence networks exist?

6.2 Authority and Responsibility

Are the authority and responsibility associated with each organizational position understood?

Is the process by which major decisions are made clearly identified?

What are the distinctions in responsibilities between the President (and Vice President), department heads, and others?

6.3 Responsiveness

Can the decision-making process respond quickly to internal and environmental problems or demands?

What kinds of responsive decisions are permitted at each management level?

7. External Events

7.1 Event History

In reference to all items in this Category, what events can be identified which have created changes in management modes, processes, or purposes?

Did KEDI anticipate the events?

What was KEDI's prior preparation? Response?

7.2 Event Future

What events may be expected in the future which could alter management modes, processes, or purposes?

What actions may be taken to defend against or take advantage of anticipated events?

Category III - Planning Criteria

Although planning may be considered as a function of management, the planning process in this outline is separated out to emphasize its significance. KEDI needs an ability to adapt to changing supports and demands from its environment. Anticipating the future thus becomes a major organizational concern.

1. Design for Planning

   1.1 Responsibility

      Is the planning responsibility identifiable?

      Are the lines of planning responsibility between planning personnel and the departments clear?

      At what levels is there analysis of future demand and future capability?

      Are alternative futures considered?

   1.2 Status

      Does the leadership of KEDI support the concept and practice of internal planning?

      How is aware is the leadership of an internal planning input role?

   1.3 Resources

      Are resources in terms of time, technology and staff available to develop and evaluate plans?

      How are resources marshalled for planning?

2. Objectives

   2.1 Mission Statement

      Does KEDI have a clear, comprehensive Mission Statement?

      Is there evidence of mission support by the leadership and among the departments?

2.2 Review and Analysis

Is there an established process for reviewing and revising the institutional and departmental mission statements?

Who is involved in such review?

3. Program-Mission Consistency

3.1 Mission-National Policy

Is there congruence between the KEDI mission and the national educational plan?

Between KEDI mission and MOE bureau plans?

3.2 Mission-Programs

Is there congruence between programs and projects accepted and KEDI mission?

Is there congruence between the programs and policies initiated and KEDI mission?

4. Generating and Utilizing Technical Information

4.1 Planning Technology

In attempting to describe the future are modern planning technologies employed? Cost effectiveness? Simulation? Future analyses? Need assessment? PERT? Linear programming? Delphi techniques?

Which techniques are employed in program planning?

Which evaluation technologies are used?

4.2 Dissemination and Utilization

Is there a clear responsibility for generating and disseminating planning information?

Is there evidence that new technical information about the future influences the direction of programs and projects?

5. Implementation

5.1 New Plans and Policies

How are new resources and demands translated into institutional goals?

How are goals translated into departmental programs and projects?

Where do the responsibilities lie for such implementation?

CATEGORY IV - Products and Services Outcomes

In the final analysis organizations are accountable for the services they agree to perform. Organizations and individuals with which KEDI relates will all ask the question, "How effective is KEDI"? The criteria employed in such judgment by the government, universities, and teacher groups may well be different; indeed, such criteria may never be made explicit. A crucial function of KEDI, then, is to demonstrate to its various publics its level of performance and success in achieving its mission.

1. Outputs

1.1 Program and Materials Development

How complete is the design of the new instructional system?

How many diagnostic tests have been produced? Remedial materials? TV/radio programs? Test materials? Teachers guide, Student Workbooks?

What have products cost?

1.2 Program Diffusion

How extensively have the above system and materials been difused?

Has MOE assumed diffusion responsibility?

1.3 Technical Papers and Monographs

How many technical papers have KEDI staff published?

How many monographs?

What is the readership?

2. Direct Outcomes

   2.1 Educational Achievement

   Can changes in educational achievement be attributed to the introduction of KEDI programs?

   How is change determined?

   2.2 Teacher Competence

   As the result of participation in KEDI activities are teachers viewed as being more competent?

   By whom--students? administrators? themselves?

   2.3 Educational Equity

   Have KEDI materials (partial system) reduced regional disparities in educational achievement?

   How cost effective is this effort?

   2.4 National Plans and Policies

   Was KEDI's technical input to national planning reflected in official plan documents?

   Has KEDI's technical advice been incorporated into national policies?

3. Indirect Outcomes

   3.1 Student, Teacher, and Parent Attitudes

   In addition to changes in student achievement have there been changes in attitudes attributable to KEDI programs?

   Have there been changes in the level of student interest in schooling? Teacher satisfaction? Level of parental participation?

   How have attitudes been measured?

3.2 Improved Educational Research

Have KEDI's efforts helped to promote a belief in the utility of educational research and innovations among Korean teachers?

Have KEDI trained researchers who have left KEDI continued significant research involvement?

Have KEDI's efforts with demonstration and cooperating schools stimulated research or development activities in the research centers attached to provincial boards of education?

3.3 New Cooperative Educational Linkages

Have KEDI's efforts promoted a belief in the need for closer collaboration between research training and administration in education?

Has there been growth in the belief in the utility of a national research and development institute on the part of MOE officials?

3.4 New Functions of MOE

Are the functions of MOE changing as a result of KEDI?

As MOE gives its problems to KEDI does it give up professional competencies?

3.5 International Educational Status

Have KEDI's activities received favorable international recognition?

Have KEDI's efforts increased the international perspectives of Korean educators?

4. External Events

4.1 Event History

In reference to all previous items in this Category, what events can be identified which have altered the kind, quality, and timing of KEDI product and services outcomes?

Did KEDI anticipate the event?

What was KEDI's prior preparation? Response?

4.2 Event Future

What events may be expected in the future which could alter product and services outcomes?

What actions may be taken to defend against or take advantage of anticipated events?

APPENDICES

TABLE OF CONTENTS

Page

APPENDIX 1 EVOLUTION OF KEDI ORGANIZATION AND STRUCTURE A-3

APPENDIX 2 KEDI FINANCIAL DATA A-8

APPENDIX 3 PERSONNEL DATA A-17

APPENDIX 4 A SUMMARY OF THE TENTATIVE LONG RANGE EDUCATIONAL PLAN FOR KOREA 1979 - 1991 AS DEVELOPED BY KEDI A-38

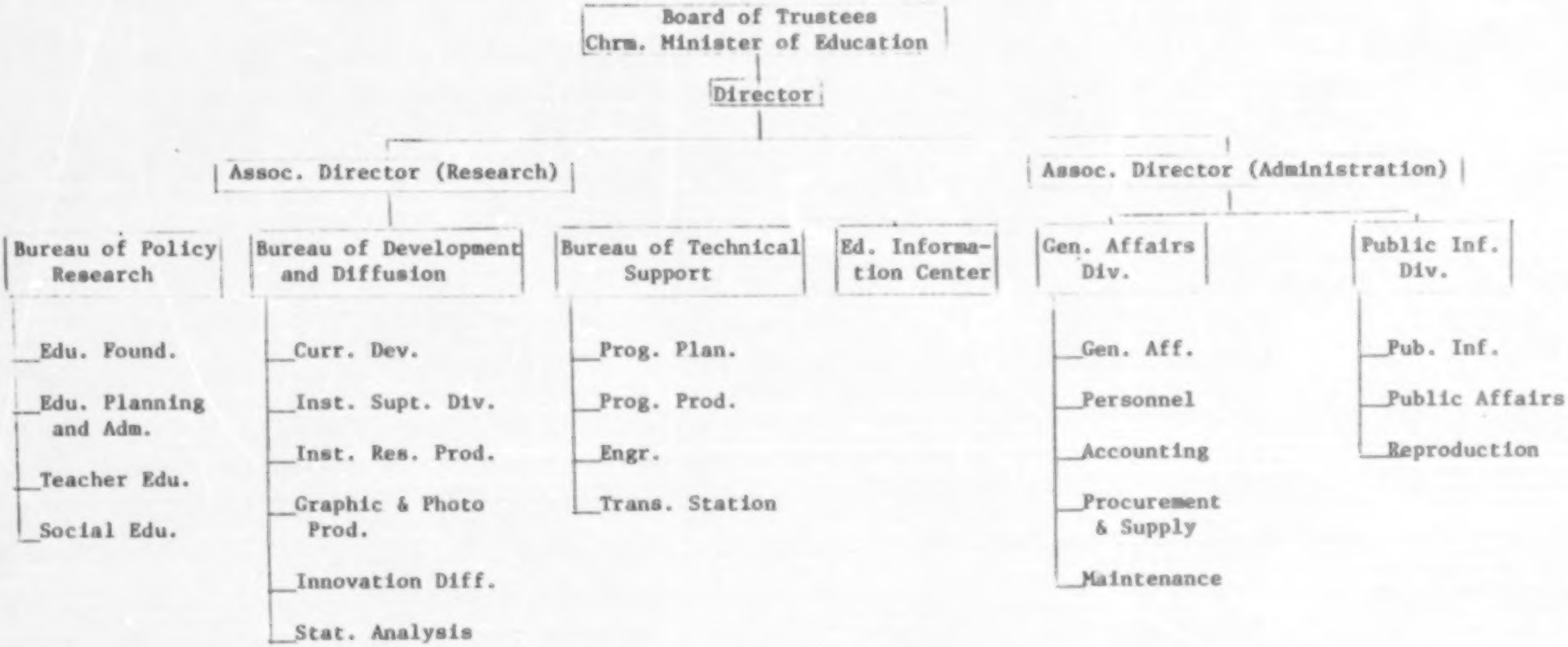
APPENDIX 5 RADIO AND TELEVISION A-42

APPENDIX 6 KEDI PUBLICATIONS A-106

APPENDIX 1

EVOLUTION OF KEDI ORGANIZATION AND STRUCTURE

Organization Chart - Aug. 1972


Board of Trustees
Chrm. Minister of Education
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Assoc. Director (Research)
Assoc. Director (Administration)
Bureau of Policy Research
Edu. Found.
Edu. Planning and Adm.
Teacher Edu.
Social Edu.
Bureau of Development and Diffusion
Curr. Dev.
Inst. Supt. Div.
Inst. Res. Prod.
Graphic & Photo Prod.
Innovation Diff.
Stat. Analysis
Bureau of Technical Support
Prog. Plan.
Prog. Prod.
Engr.
Trans. Station
Ed. Information Center
Gen. Affairs Div.
Gen. Aff.
Personnel
Accounting
Procurement & Supply
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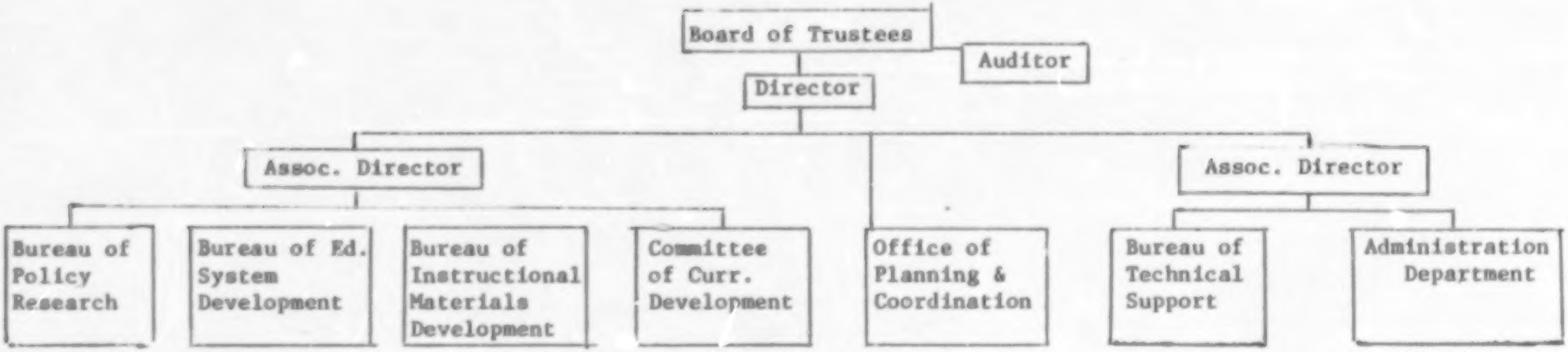
KEDI ORGANIZATION - 1975



Bureau of Policy Research

- .Study on education goals
- .Study on the New Community Ed.
- .Study on pre- and in-serv. teacher education
- .Study on industrial arts educ.
- .Study on air & corres. educ.

Bureau of Ed. System Development

- .Middle & long term educ. dev. planning
- .Study & develop. of instruc. system & school management system
- .Demon. of instruc. & mgt system
- .Eval. of new educ. system

Bureau of Instructional Materials Development

- .Study on curricul. development
- .Improving teaching-learning methods
- .Develop. of instruc. & learning materials
- .External services for studies in classroom teaching

Committee of Curr. Development

- .Curriculum & materials development for population educ.

Office of Planning & Coordination

- .Overall plan. & coordination of short & long term project
- .Formulation & adjustment of budget
- .Strategic plan. for innovation diffusion
- .International cooperation activities
- .Publication & coordination of periodicals

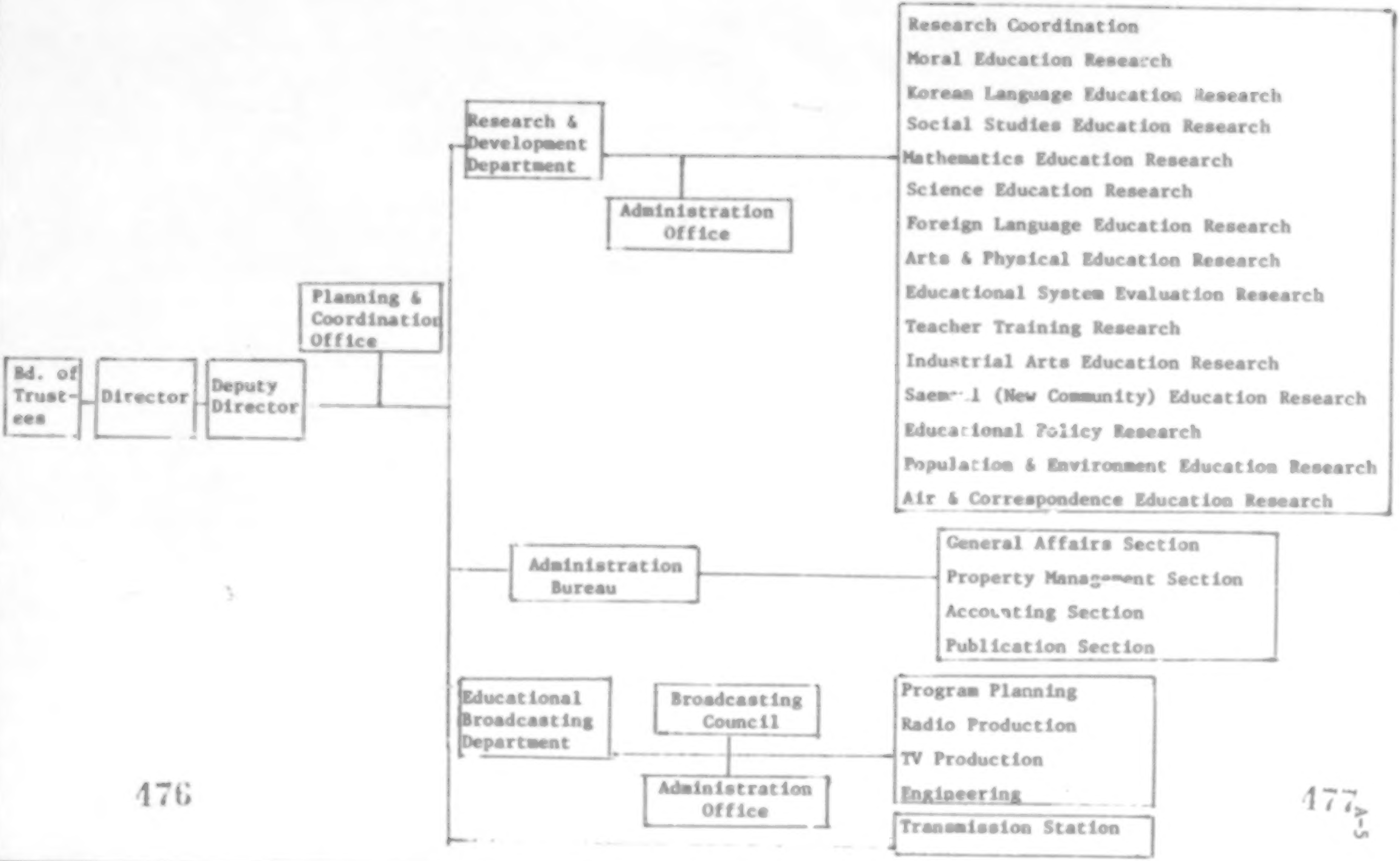
Bureau of Technical Support

- .Planning & production of educ. broadcasting programs
- .Installation & operation of broadcasting equipment
- .Installation & operation of operation of facilities

Administration Department

- .General Affairs
- .Accounting
- .Property Management
- .Library

KEDI ORGANIZATION - 1976


Bd. of Trustees
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Administration Office
Research Coordination
Moral Education Research
Korean Language Education Research
Social Studies Education Research
Mathematics Education Research
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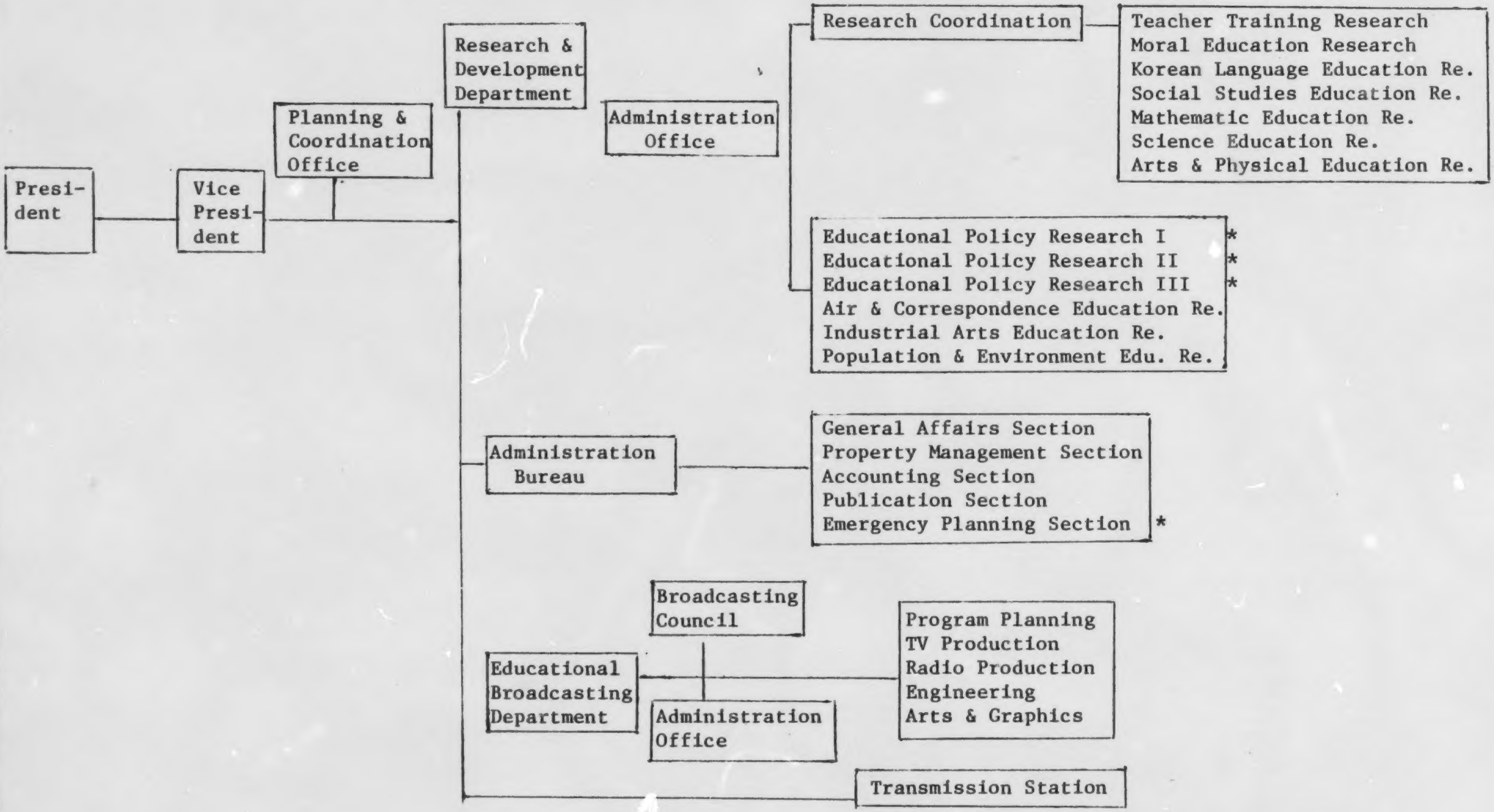
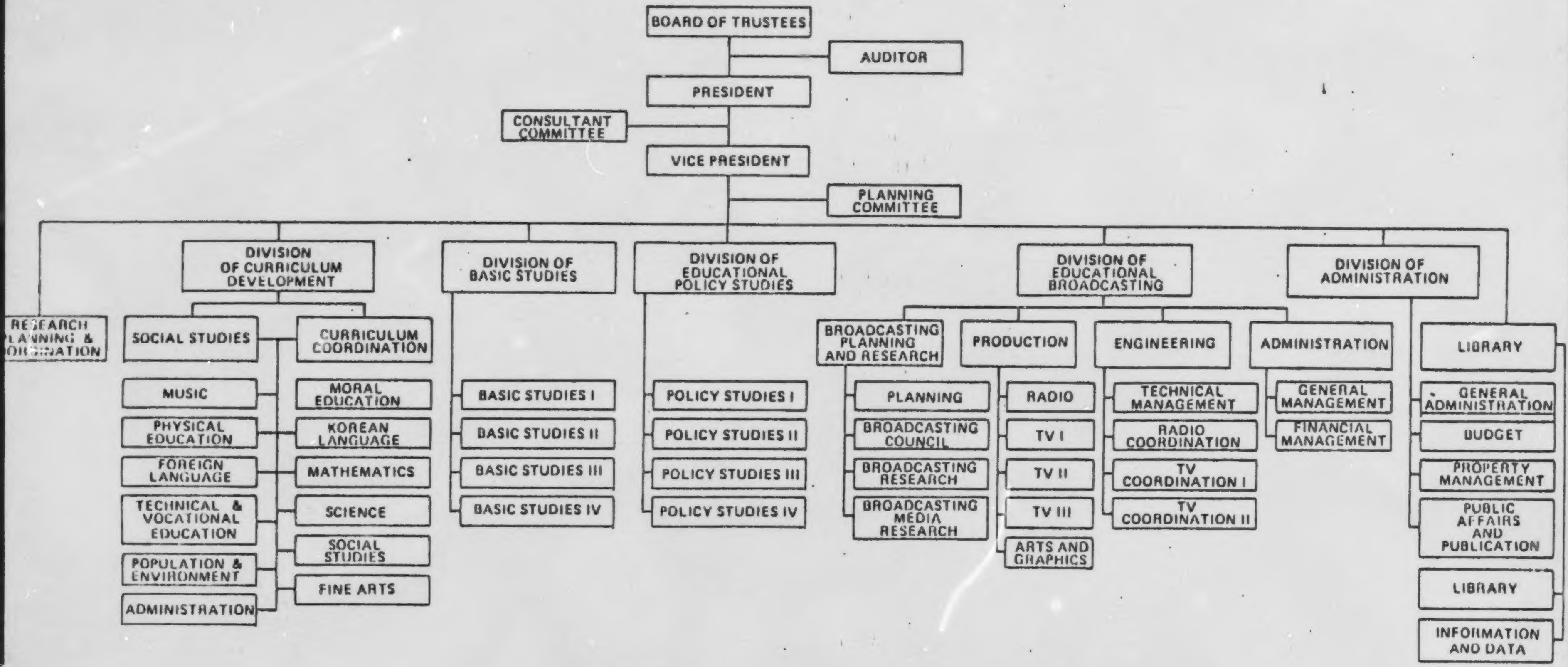
Foreign Language Education Research
Arts & Physical Education Research
Educational System Evaluation Research
Teacher Training Research
Industrial Arts Education Research
Saemaul (New Community) Education Research
Educational Policy Research
Population & Environment Education Research
Air & Correspondence Education Research
Administration Bureau
General Affairs Section
Property Management Section
Accounting Section
Publication Section
Educational Broadcasting Department
Broadcasting Council
Administration Office
Program Planning
Radio Production
TV Production
Engineering
Transmission Station

KEDI ORGANIZATION - 1977


President
Vice President
Planning & Coordination Office
Research & Development Department
Administration Office
Research Coordination
Teacher Training Research
Moral Education Research
Korean Language Education Re.
Social Studies Education Re.
Mathematic Education Re.
Science Education Re.
Arts & Physical Education Re.
Educational Policy Research I *
Educational Policy Research II *
Educational Policy Research III *
Air & Correspondence Education Re.
Industrial Arts Education Re.
Population & Environment Edu. Re.
Administration Bureau
General Affairs Section
Property Management Section
Accounting Section
Publication Section
Emergency Planning Section *
Broadcasting Council
Educational Broadcasting Department
Administration Office
Program Planning
TV Production
Radio Production
Engineering
Arts & Graphics
Transmission Station


BOARD OF TRUSTEES
AUDITOR
PRESIDENT
CONSULTANT COMMITTEE
VICE PRESIDENT
PLANNING COMMITTEE
RESEARCH LANNING & OORDINATION
DIVISION OF CURRICULUM DEVELOPMENT
SOCIAL STUDIES
CURRICULUM COORDINATION
MUSIC
PHYSICAL EDUCATION
FOREIGN LANGUAGE
TECHNICAL & VOCATIONAL EDUCATION
POPULATION & ENVIRONMENT
ADMINISTRATION
MORAL EDUCATION
KOREAN LANGUAGE
MATHEMATICS
SCIENCE
SOCIAL STUDIES
FINE ARTS
DIVISION OF BASIC STUDIES
BASIC STUDIES I
BASIC STUDIES II
BASIC STUDIES III
BASIC STUDIES IV
DIVISION OF EDUCATIONAL POLICY STUDIES
POLICY STUDIES I
POLICY STUDIES II
POLICY STUDIES III
POLICY STUDIES IV
DIVISION OF EDUCATIONAL BROADCASTING
BROADCASTING PLANNING AND RESEARCH
PLANNING
BROADCASTING COUNCIL
BROADCASTING RESEARCH
BROADCASTING MEDIA RESEARCH
PRODUCTION
RADIO
TV I
TV II
TV III
ARTS AND GRAPHICS
ENGINEERING
TECHNICAL MANAGEMENT
RADIO COORDINATION
TV COORDINATION I
TV COORDINATION II
ADMINISTRATION
GENERAL MANAGEMENT
FINANCIAL MANAGEMENT
DIVISION OF ADMINISTRATION
LIBRARY
GENERAL ADMINISTRATION
BUDGET
PROPERTY MANAGEMENT
PUBLIC AFFAIRS AND PUBLICATION
LIBRARY
INFORMATION AND DATA

ORGANIZATIONAL STRUCTURE OF THE KOREAN EDUCATIONAL DEVELOPMENT INSTITUTE
EFFECTIVE JANUARY, 1979

APPENDIX 2

KEDI FINANCIAL DATA

KEDI BUDGET SUMMARY--OPERATIONAL CATEGORIES (PROGRAMS)

In 1000 Won	1973			1974			1975		
	Personnel	Other	Total	Personnel	Other	Total	Personnel	Other	Total
Policy Studies	18,281	4,684	22,965	13,384	2,303	15,687	20,449	7,461	27,910
Contract Projects[1]	3,742	11,838	15,580	6,897	33,072	39,969	8,373	62,492	70,865
E/M Project [2]	86,320	57,846	144,166	91,258	138,853	230,111	174,555	171,452	346,007
Total Direct Program Expenditures	108,343	74,368	182,711	11,539	174,228	285,767	203,377	241,405	444,782
Operations and Management	33,959	60,928	94,887	44,040	75,896	119,936	35,926	71,497	107,423
Debt Service-Interest	-	65,472	65,472	-	210,455	210,455	-	409,806	409,806
Total Indirect Exp.	33,959	141,527	175,486	44,040	310,450	354,490	35,926	503,844	539,770
Total Operating Exp.	142,302	215,895	358,197	155,579	484,678	640,257	239,303	745,249	984,552
Proof Check									
Add Debt Retirement	-	-	-	-	-		-	450,656	450,656
Add Construction Costs	-	50,574	50,574	-	758,984	758,984	-	862,029	862,029
Total KEDI	142,302	266,469	408,771	155,579	1243,662	1399,241	239,303	2057,934	2297,237

[1] Sum of program in two bureaus
[2] Sum of program exp. in four bureaus

OPERATING EXPENDITURES: OPERATIONAL CATEGORY PERCENTAGES

	1973			1974			1975		
	Direct Costs	Indirect Costs	Total Operating Expenses	Direct Costs	Indirect Costs	Total Operating Expenses	Direct Costs	Indirect Costs	Total Operating Expenses
Policy Studies	12.57		6.41	5.49		2.45	6.28		2.83
Contract Projects	8.53		4.35	13.99		6.24	15.93		7.20
E/M Project	78.90		40.25	80.52		35.94	77.79		35.15
Operations & Management	-	54.07	26.49	-	33.83	18.73	-	19.90	10.91
Debt Service	-	37.31	18.28	-	59.37	32.88	-	75.92	41.62
Misc.	-	8.62	4.22	-	6.80	3.76	-	4.18	2.29
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total Direct Costs	-	-	51.01	-	-	44.63	-	-	45.18
Total Indirect Costs	-	-	48.99	-	-	55.37	-	-	54.82
			100.00			100.00			100.00

KEDI--Budget Summary - Current Operating Expenses

1976 Actual Expenditures

In 1000 Won				Personnel	Other	Total
Policy Studies				26,944	8,964	35,908
Contract Projects				56,135	151,321	207,456
E-M Project						
From R & D Department	99,805	66,448	166,253			
Broadcasting	197,529	972,782	1,170,311			
Transmission	84,397	100,977	185,374			
Interest Expense	-	378,610	378,610			
Total E-M Project				381,731	1,518,817	1,900,548
Total Direct Costs				464,810	1,679,102	2,143,912
Planning & Coordination				35,436	15,817	51,253
Operations & Management				131,729	95,929	227,658
*Interest Expense				-	26,285	26,285
Miscellaneous Expense				-	23,297	23,297
Contingency Fund				-	23,561	23,561
Total Indirect Costs				167,165	184,889	352,054
Total Current Operating Expenditures				631,975	1,863,991	2,495,966
Proof Check: Debt Retirement				-	450,656	450,656
Total Expenditure Budget				631,975	2,314,647	2,946,622

KEDI Expenditures--Operational Category Percentages

1976

	Direct Costs	Indirect Costs	Total
Policy Studies	1.67		1.44
Contract Projects	9.68		8.31
E-M Project	88.65		76.15
Planning & Coordination		14.56	2.05
Operations & Management		64.67	9.12
*Miscellaneous		20.77	2.93
	100.00	100.00	100.00
% Direct Costs			85.90
% Indirect Costs			14.10
			100.00

* Includes Miscellaneous, Contingency, and Interest Expenses not applicable to E-M Project.

KEDI Budget Summary--Operating Expenses

In 1000 Won

1977 (Actual Expenditures)

				Personnel	Other	Total
Policy Studies				30,415	51,515	81,930
Contract Projects				84,199	643,317	727,516
E-M Project						
From R & D Dept.	176,167	363,780	539,947			
Educational Broadcasting	233,010	532,274	765,284			
Transmission	66,799	20,343	87,142			
Interest Expense	-	343,717	343,717			
Total E-M Project				475,976	1,260,114	1,736,090
Total Direct Costs				590,590	1,954,946	2,545,536
Planning & Coordination				47,683	13,598	61,281
Operations & Management				149,429	158,767	308,196
Miscellaneous				-	17,949	17,949
Total Indirect Costs				197,112	190,314	387,426
Total Operating Expenses				787,702	2,145,260	2,932,962
Proof Check						
Debt Retirement				-	450,656	450,656
Carry-over to 1978					249,551	249,551
Total				787,702	2,845,467	3,633,169

NOTE: In the KEDI 1977 Expenditures was an item Miscellaneous - 578,512. That item was distributed as follows in this summary:

To Broadcasting Dept. Depreciation Costs	242,132
To R & D Dept. Overseas Training	178,193
To Interest Exp. in E-M P. - Increases in interest rate	113,200
To Policy Studies Overseas Training	27,038
Remaining Miscellaneous	17,949

KEDI Expenditures--Operational Category Percentages

1977

	Direct Costs	Indirect Costs	Total
Policy Studies	3.22		2.79
Contract Projects	28.58		24.81
E-M Project	68.20		59.19
Planning & Coordination		15.82	2.09
Operations & Management		79.55	10.51
Miscellaneous		4.63	.61
	100.00	100.00	100.00

% Direct Costs	86.79
% Indirect Costs	13.21
	100.00

KEDI Budget Summary--Operational Categories

1978

In 1000 Won

				Personnel	Other	Total
Policy Studies				64,613	9,248	73,861
Contract Projects				137,783	720,410	858,193
E-M Project						
From R & D Dept.	173,467	212,832	385,299			
Educ. Broadcasting Dept.	287,158	438,846	726,004			
Broadcast Transmission	90,319	1,680,493	1,770,812			
Interest Expense	-	237,630	237,630			
Total E-M Project				549,944	2,569,801	3,119,745
Total Direct Program Costs				752,340	3,299,459	4,051,799
Planning and Coordination				32,202	24,631	56,833
Operating & Management				175,941	119,234	295,175
Miscellaneous Expenses				-	121,785	121,785
Total Indirect Costs				208,143	265,650	473,793
Total Operating Budget				960,483	3,565,109	4,525,592
Carry-Over from 1977 (proof check)				-	249,551	249,551
Total Budget - 1978				960,483	3,814,660	4,775,143
Planned Carry-over to 1979						391,408
						5,166,551

KEDI Operating Budget - Operational Category Percentages

1978

	Direct Costs	Indirect Costs	Total
Policy Studies	1.82		1.63
Contract Projects	21.18		18.96
E-M Project	77.00		68.94
Planning & Coordination		12.00	1.26
Administration		62.30	6.52
Miscellaneous		25.70	2.69
	100.00	100.00	100.00

% Direct Costs of Total Operational Exp.	89.53
% Indirect Costs of Total Operational Exp.	10.47
	100.00

APPENDIX 3

PERSONNEL DATA *

A. Salary Schedules

B. Overseas Training

C. Key Personnel

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* Data as of July, 1978

A. KEDI SALARY SCHEDULE
(as of June, 1978)

Standing Board and Special Staff Monthly Salary *

	Title	Base Pay	Allowance	Sum
The Board	President	316,000	211,000	527,000
	Auditor	279,000	186,000	465,000
Special Staff	Vice President	279,000	186,000	465,000

* Salary data in Korean Won (Approximately 480 won = U.S. $1.00)

Monthly Research Salary

		1	2	3	4	5	6	7	8	9	10	11	12	13
Head Researcher	Base pay	216,000	223,000	240,000	252,000	264,000	276,000							
	Allowance	114,000	152,000	160,000	168,000	176,000	184,000							
	Sum	360,000	380,000	400,000	420,000	440,000	460,000							
Senior Research	Base pay	148,000	155,000	162,000	169,000	176,000	184,000	191,000	198,000					
	Allowance	98,000	103,000	108,000	113,000	118,000	122,000	127,000	132,000					
	Sum	246,000	258,000	270,000	282,000	294,000	306,000	318,000	330,000					
Research	Base pay	79,000	83,000	88,000	92,000	96,000	100,000	104,000	109,000	113,000	117,000	121,000	125,000	130,000
	Allowance	53,000	56,000	58,000	61,000	64,000	67,000	70,000	72,000	75,000	78,000	81,000	84,000	86,000
	Sum	132,000	139,000	146,000	153,000	160,000	167,000	174,000	181,000	188,000	195,000	202,000	209,000	216,000
Associate Research	Base pay	57,000	61,000	64,000	68,000	71,000	75,000	79,000	82,000	86,000	89,000	93,000	97,000	100,000
	Allowance	38,000	40,000	43,000	45,000	48,000	50,000	52,000	55,000	57,000	60,000	62,000	64,000	67,000
	Sum	95,000	101,000	107,000	113,000	119,000	125,000	131,000	137,000	143,000	149,000	155,000	161,000	167,000

Monthly Engineer Salary

Step Classification		1	2	3	4	5	6	7	8
1 Grade	Base pay	191,000	203,000	215,000	227,000	239,000			
	Allowance	127,000	135,000	143,000	151,000	159,000			
	Sum	318,000	338,000	358,000	378,000	398,000			
2 Grade	Base pay	134,000	140,000	146,000	152,000	158,000	164,000		
	Allowance	90,000	94,000	98,000	102,000	106,000	110,000		
	Sum	224,000	234,000	244,000	254,000	264,000	274,000		
3 Grade	Base pay	98,000	103,000	107,000	112,000	117,000	122,000		
	Allownce	65,000	68,000	72,000	75,000	78,000	81,000		
	Sum	163,000	171,000	179,000	187,000	195,000	203,000		
4 Grade	Base pay	71,000	74,000	78,000	82,000	85,000	89,000	92,000	
	Allowance	47,000	50,000	52,000	54,000	57,300	59,000	62,000	
	Sum	111,000	124,000	130,000	136,000	142,000	148,000	154,000	
5 Grade	Base pay	46,000	49,000	52,000	55,000	58,000	61,000	64,000	67,000
	Allowance	31,000	33,000	35,000	37,000	39,000	41,000	43,000	45,000
	Sum	77,000	82,000	87,000	92,000	97,000	102,000	107,000	112,000

Monthly Broadcaster and Librarian Salary

Step Classification		1	2	3	4	5	6	7	8
1 Grade	Base pay	188,700	200,700	212,700	224,700	236,700			
	Allowance	125,800	133,800	141,800	149,800	157,800			
	Sum	314,500	334,500	354,500	374,500	394,500			
2 Grade	Base pay	132,300	138,300	144,300	150,300	156,300	162,300		
	Allowance	88,200	92,200	96,200	100,200	104,200	108,200		
	Sum	220,500	230,500	240,500	250,500	260,500	270,500		
3 Grade	Base pay	95,700	100,500	105,300	110,100	114,900	119,700		
	Allowance	63,800	67,000	70,200	73,400	76,600	79,800		
	Sum	159,500	167,500	175,500	183,500	191,500	199,500		
4 Grade	Base pay	68,700	72,300	75,900	79,500	83,100	86,700	90,300	
	Allowance	45,800	48,200	50,600	53,000	55,400	47,800	60,200	
	Sum	114,500	120,500	126,500	132,500	138,500	144,500	150,500	
5 Grade	Base pay	44,100	47,100	50,100	53,100	56,100	59,100	62,100	65,100
	Allowance	29,400	31,400	33,400	35,400	37,400	39,400	41,400	43,400
	Sum	73,500	78,500	83,500	88,500	93,500	98,500	103,500	108,500

Monthly Administrator Salary

Classification \ Step		1	2	3	4	5	6	7	8
1 Grade	Base pay	187,000	199,000	211,000	223,000	235,000			
	Allowance	124,000	132,000	140,000	148,000	156,000			
	Sum	311,000	331,000	351,000	371,000	391,000			
2 Grade	Base pay	130,000	136,000	142,000	148,000	154,000	160,00		
	Allowance	87,000	91,000	95,000	99,000	103,000	107,000		
	Sum	217,000	227,000	237,000	247,000	257,000	267,000		
3 Grade	Base pay	94,000	98,000	103,000	108,000	113,000	118,000		
	Allowance	62,000	66,000	69,000	72,000	75,000	78,000		
	Sum	156,000	164,000	172,000	180,000	188,000	196,000		
4 Grade	Base pay	67,000	70,000	74,000	77,000	81,000	85,000	88,000	
	Allowance	44,000	47,000	49,000	52,000	54,000	56,000	59,000	
	Sum	111,000	117,000	123,000	129,000	135,000	141,000	147,000	
5 Grade	Base pay	42,000	45,000	48,000	51,000	54,000	57,000	60,000	63,000
	Allowance	28,000	30,000	32,000	34,000	36,000	38,000	40,000	42,000
	Sum	70,000	75,000	80,000	85,000	90,000	95,000	100,000	105,000

Monthly Technician Salary

Step	Base pay	Allowance	Sum
30	142,000	95,000	237,000
29	136,000	91,000	227,000
28	130,000	87,000	217,000
27	118,000	78,000	196,000
26	113,000	75,000	188,000
25	108,000	72,000	180,000
24	103,000	69,000	172,000
23	98,000	66,000	164,000
22	94,000	62,000	156,000
21	88,000	59,000	147,000
20	85,000	56,000	141,000
19	81,000	54,000	135,000
18	77,000	52,000	129,000
17	74,000	49,000	123,000
16	70,000	47,000	117,000
15	67,000	44,000	11,000
14	63,000	42,000	105,000
13	60,000	40,000	100,000
12	57,000	38,000	95,000
11	54,000	36,000	90,000
10	51,000	34,000	85,000
9	48,000	32,000	80,000
8	45,000	30,000	75,000
7	42,000	28,000	70,000
6	40,000	26,000	66,000
5	37,000	25,000	62,000
4	35,000	23,000	58,000
3	32,000	22,000	54,000
2	30,000	20,000	50,000
1	28,000	18,000	46,000

Monthly General Maintenance Personnel Salary

Step	Base pay	Allowance	Sum
25	101,000	68,000	169,000
24	97,000	65,000	162,000
23	93,000	62,000	155,000
22	89,000	59,000	148,000
21	85,000	56,000	141,000
20	80,000	54,000	134,000
19	77,000	51,000	128,000
18	73,000	49,000	122,000
17	70,000	46,000	116,000
16	66,000	44,000	110,000
15	62,000	42,000	104,000
14	59,000	40,000	99,000
13	56,000	38,000	94,000
12	53,000	36,000	89,000
11	50,000	34,000	84,000
10	47,000	32,000	79,000
9	44,000	30,000	74,000
8	41,000	28,000	69,000
7	38,000	26,000	64,000
6	36,000	24,000	60,000
5	34,000	22,000	56,000
4	31,000	21,000	52,000
3	29,000	19,000	48,000
2	26,000	18,000	44,000
1	24,000	16,000	40,000

Daily Wages

Step	Daily Pay	Monthly pay
25	4,500	112,500
24	4,300	107,500
23	4,100	102,500
22	3,900	97,500
21	3,700	92,500
20	3,500	87,500
19	3,300	82,500
18	3,100	77,500
17	2,900	72,500
16	2,700	67,500
15	2,500	62,500
14	2,300	57,500
13	2,100	52,500
12	1,900	47,500
11	1,700	42,500
10	1,600	40,000
9	1,500	37,500
8	1,400	35,000
7	1,300	32,500
6	1,200	30,000
5	1,100	27,500
4	1,000	25,000
3	900	22,500
2	800	20,000
1	700	17,500

Intern Research Salary

Step	Monthly pay
3	85,000
2	80,000
1	75,000

FRINGE BENEFITS

1. Once a year all KEDI staff members are required to undergo a physical examination. In the event of serious illness personnel are allowed to take sick leave pending permission from KEDI.
2. Twice a year in the spring and autumn KEDI sponsors leisure activities for its staff members in the form of a picnic and athletic meet.
3. All KEDI staff members are provided luncheon coupons and work uniform jackets.
4. Every morning and evening KEDI offers commuter bus service to its staff members.
5. KEDI staff members who suffer special hardship or who celebrate outstanding occasions in their lives are remembered with contributions of support.
6. KEDI provides staff members who so desire the opportunity to construct housing for a special rate on areas of land which have been purchased by the Institute.

B. OVERSEAS TRAINING

(Aug. 30, 1972-June 30, 1978)

Remarks:
S: Seminar Ob: Observation
W: Workshop OJT: On Job Training
T: Training C: Conference

NAME	TITLE	ROLE	CONTENTS	PERIOD	COUNTRY	REMARKS
Dr. Lee, Yung-Dug	Director	Director	UNESCO Conference	8/72 - 9/72	Thailand	S
Dr. Lee, Yung-Dug	"	"	"	11/72 -12/72	France	S
Dr. Lee, Yung-Dug	"	"	"	3/73 - 4/73	Swiss	S
Mr. Park, Do-Sun	Researcher	Sr. Researcher (Ed. Policy III)	Instructional Design	6/" -12/"	U.S.A.	T
Mr. Byun, Yung-Kyo	"	" " (Innovation)	"	" "	"	T
Mrs. Hong, Sun-Jung	"	Resigned	"	" "	"	T
Mr. Cho, Won-Ho	"	Sr. Researcher (Inst.Materials)	"	" "	"	T
Mr. Son, Hong	Producer	Resigned	ETV Production	" "	"	T
Mr. Kim, Dae-Hyun	"	"	"	" "	"	T
Miss Han, Jung-Sun	"	"	"	" "	"	T
Mr. Kim, Jin-Sung	"	"	"	" "	"	T
Mr. Chang, Un-Hyo	Researcher	Sr. Researcher(Demonstration)	Instruction & Learning	8/73 -12/74	"	T
Dr. Kim, Yoon-Thai	"	Chief, Researcher & Coordination	Management System	" "	"	T
Dr. Yoo, An-Jin	"	Resigned	Instruction & Curriculum	" "	"	T
Dr. Lee, Yung-Dug	Director	Director	E/M Project	"	"	C
Dr. Shin, Kuk-Bom	Dir. Ed. Policy Dept.	Director, Ed. Broad. Bureau	Pop. & Ed. Planning	9/73 -	Thailand	S
Dr. Shin, Se-Ho	Director, Inst.	Director R & D Bureau	Ed. Dev.	" -	Japan	W
Dr. Kim, Yung-Ho	Researcher	Resigned	Ed. Tech.	11/73 -12/74	"	S
Mr. Song, Man-Young	Auditor	Auditor	Observation (TCOM)	"	U.S.A. & Bahama	Ob
Mr. Lim, Han-Ik	Director, Tech. Support Bureau	Director, Office of Planning & Coordination	"	"	"	Ob
Dr. Lee, Yung-Dug	Director	Director	East-West Center Conf.	1/74 - 1/74	Philippines	C
Dr. Lee, Yung-Dug	"	"	Ed. Innovation	2/74 - 3/74	Thailand	S
Mr. Park, Bong-Won	Engineer	Head of Transmitting Site	On the Job Training (TCOM)	5/74 - 5/74	U.S.A. & Bahama	OJT
Mr. Lee, Chul-Joon	"	Engineer	"	" "	" "	OJT
Mr. Chang, Kee-Keung	"	"	"	" "	" "	OJT

NAME	TITLE	ROLE	CONTENTS	PERIOD	COUNTRY	REMARKS
Mr. Lee, Loo-Hyung	Engineer	Engineer	On the Job Training(TCOM)	5/74 - 5/74	U.S.A. & Bahama	OJT
Mr. Choi, Jong-Jin	Researcher	Resigned	School Management	6/" 12/"	U.S.A.	T
Mr. Park, Jae-Mun	"	Researcher (Teacher Ed.)	Instructional System	" "	"	T
Mr. Kwak, Byong-Sun	"	Resigned	Educational Technology	" "	"	T
Mr. Koo, Hwak-Bong	"	Sr. Researcher (Office of Planning & Coordination)	Teacher Education	" "	"	T
Miss Han, Jung-Sun	Producer	Resigned	ETV Production	" "	Japan	T
Dr. Lee, Yung-Dug	Director	Director	Pop. Ed.	7/74 - 7/74	U.S.A.	W
Dr. Shin, Kuk-Bom	Director Ed. Policy, Dept.	Director, Ed. Broad. Bureau	Pop. Ed.	" "	"	W
Dr. Shin, Se-Ho	Director, Inst. Material	Director R & D Bureau	E/M Project	" "	"	W
Mr. Kim, Soo-Il	Researcher	Researcher (Pop. Ed.)	Pop. Ed. Internship	" - 8/74	Thai, Philippines	T
Dr. Ahn, Chang-Il	"	Resigned	Ed. Innovation	8/74 - 10/74	Phil. Thai	T
Mr. Lee, Kye-Hak	"	"	Adult, Ed. TV Program	" "	Singapore	T
Mr. Lee, Yung-Sooo	"	Correspondence Ed.	"	" "	"	T
Mr. Oh, Jin-Suk	"	Chief, Broad. Planning	Math. Ed.	9/" - 12/74	U.S.A.	T
Dr. Kim, Ho-Kwon	Deputy Dir. (R & D)	Resigned	Curriculum Evaluation	" 10/74	W.Germany, France, England	W, S & Ob
Dr. Shin, Se-Ho	Director, Inst. Mater. Dev. Dept	Director R & D Bureau	UNESCO Ed. Planning	" "	U.S.A.	W
Dr. Kim, Jae-Bom	Director, Sys. Dev. Dept.	Resigned	Pop. Ed.	" "	Hawaii	W
Dr. Shin, Kuk-Bom	Dir. Ed.	Director, Ed. Broad. Bureau	Pop. Ed.	" "	"	W
Mr. Suh, Chung-Hwa	Researcher	Researcher (Demonstration	Management System	" - 3/76	U.S.A.	T
Mr. Han, Jong-Ha	"	" (Science Ed.)	Science Ed.	" - 3/77	"	T
Mr. Lim, Han-Ik	Dir. Tec. Support Bur.	Director, Office of Planning & Coordination	Pre-Bid Conference	" - 10/74	"	C
Mr. Yang, Sung-Won	Engineer	Head, Engineering Office	"	" "	"	C
Dr. Lee, Yung-Dug	Director	Director	Elem. Ed.	10/74- "	Vietnam	S
Dr. Kim, Ho-Kwon	Deputy Dir. (R & D)	Resigned	E/M Project	" "	U.S.A.	C

NAME	TITLE	ROLE	CONTENTS	PERIOD	COUNTRY	REMARKS
Dr. Shin, Kuk-Bom	Dir. Ed. Policy Dept.	Director, Ed. Broad. Bureau	CEPTA-TV	12/74 - 12/74	Singapore	C
Dr. Shin, Kuk-Bom	"	"	Pop. Ed.	1/75 - 1/75	Thai	W
Mr. Park,Do-Sun	Researcher	Sr. Researcher (Ed. Policy III)	Teacher Ed. & Ed. Inno.	2/75 - 2/75	Japan	T
Dr. Shin-Se-Ho	Dir. Inst. Material Dev.	Dept. Director R & D Bureau	Ed. Tech	" "	"	W
Dr. Lee, Yung-Dug	Director	Director	Ed. Inno. Management	3 " 4 "	India	W
Dr. Kim,Shin-Bok	Sr. Researcher	Resigned	Tech. Ed.	4 " 4 "	Malaysia	W
Dr. Shin,Kuk-Bom	Dir, Ed. Pol. Dept.	Director, Ed. Broad. Bureau	Teacher Ed. & Curr. Dev.	5 " 6 "	Philippines	W
Mr. Yang,Sung-Won	Engineer	Head, Engineering Dept.	Broad. Sys. Install & Oper	" "	U.S.A.	T
Mr. Park, Myung-Ha	"	Engineer	"	" "	"	T
Mr. Kim, Suk-Keun	"	"	"	" "	"	T
Dr. Shin, Se-Ho	Director	Director R & D Bureau	Curr. - Dev.	6 " 7 "	Thai	W
Mr. Song, Yong-Eui	Researcher	Researcher Social Studies Ed.	Pop. Ed.	" "	Malaysia	T
Mr. Kim, Jin-Sung	Producer	Resigned	Ed. TV Production	7 " 9 "	Japan	T
Dr. Song,Yoo-Jae	Researcher	"	Ed. Tech.	7 " 8 "	Singapore	W
Mr. Lee, Yung-Soo	"	Researcher Correspondence Ed.	"	8 " /77	U.S.A.	T
Dr. Lee, Jung-Keun	"	Tech. Ed. Research	Tech. Ed.	" " 4 "	"	T
Dr. Shin, Se-Ho	Dir. Inst. Material Dev.	Director, R & D Bureau	Curr. Dev.	" " 9 "	Afghanistan	W
Mr. Chung,Hoon-Sang	Broadcasting Staff (Planning)	Office of Planning & Coord.	Ed. Media Planning & Production	8 " 10 "	Malaysia	T
Mr. Cha, Joon-Lak	Producer(Radio)	Producer	ETV Production	9 " 3/76	U.S.A.	T
Mr. Park,Mun-Tae	Researcher	Researcher Broad. Evaluation	"	" "	"	T
Mr. Chung, Tae-Bum	"	" (Sys. Eval.)	Ed. Management	" "	"	T
Mr. Ha,Sung-Hae	Producer(Radio)	Producer	ETV Production	" 11/75	W. Germany	T
Mrs. Lee Yung-Ja	Researcher	Resigned	"	" 1/76	"	T
Mr. Kho,Yung-Hee	"	"	Film Production	10/75 12/76	Singapore	T
Mr. Hong, Dong-Shik	"	"	"	" "	"	T
Mr. Song, In-Duk	Broadcasting Staff(Program)	Broad. Eval.	"	" "	"	T
Dr. Lee,Yung-Dug	Director	Director	New Trends in Ed. Tech.	" 10/75	Malaysia	S
Mr. Chung,Hoon-Sang	Broadcasting	Office of Planning & Coord.	"	" "	"	S
Mr. Jun,Sung-Yun	Researcher	Researcher(Innovation)	Ed. Innov. & Management	11/75 - 12/75	Indonesia	W

NAME	TITLE	ROLE	CONTENTS	PERIOD	COUNTRY	REMARKS
Dr. Lee, Yung-Dug	Director	Director	APEID	1/76 - 1/76	Thai	S
Dr. Shin,Kuk-Bom	Dir. Ed. Broad Bureau	Dir. Ed. Broad. Bureau	CEPTA-TV & NHK	" - 2/76	Singapore, Japan	C & Ob
Dr. Lee, Yung-Dug	Director	Director	Ed. Planning (Teaching & Learning	3/76 - 3/76	France	C
Dr. Lee, Yung-Dug	"	"	Teacher Ed. & Science Materials	" "	Japan	C
Dr. Lee, Yung-Dug	"	"	APEID	4 " - 4 "	Thailand	C
Dr. Shin, Se-Ho	Dir. R & D Bur.	Dir. R & D Bureau	E/M Project	5 " 6 "	U.S.A.	C
Dr. Shin, Kuk-Bom	Dir. Ed.	Director, Ed. Broad. Bureau	Satellite Communication	6 " /77	"	S
Mr. Hong, Sah Hung	Researcher	Pop. Ed.	Pop. Ed.	" 76	Thai	T
Miss, Shin, Kun-Ja	"	"	"	" "	"	T
Dr. Lee,Yung-Dug	Director	Director	Communication Policy & Pop. Ed.	7/76 7/76	U.S.A.	S
Dr. Shin, Kuk-Bom	Dir. Ed. Broad Bureau	Dir. Ed. Broad. Bureau	"	8 " 8 "	Philippines	S
Mr. Park,Kyung-Sook	Researcher	Researcher (Ed. Policy III)	Ed. Tech.	8 " 9 "	Japan	T
Mr. Lee,Kwang-Pyo	"	" Corres. Ed.	Correspondence Ed.	9 " 10 "	New Zealand	T
Mr. Kim, Sang-Hon	Broad. Staff (Film)	Chief, Film Section	TV Animation	10 " 11 "	Singapore	T
Mr. Shin, Yun-Chul	Broad. Staff (Graphic)	Graphic	"	" "	"	T
Mr. Ro, Chong-Hee	Researcher	Researcher (Ed. Policy I)	The 3rd Ed. Planning	" 12 "	Thai,Philippines	W
Mr. Kim,Yoon-Keun	Producer	Producer (TV)	Editing Film & Sound	" "	Singapore	T
Mr. Park,Chong-Kyu	Engineer	Resigned	"	" "	"	T
Dr. Shin, Se-Ho	Director R & D Bureau	Director R & D Bureau	Ed. Dev.	11 "	W. Germany	Ob
Dr. Shin,Kuk-Bom	Director Ed. Broad. Bureau	Director Ed. Broad. Bureau	CEPTA-TV	12 "	Indonesia	C
Dr. Kim,Yoon-Tai	Chief, Research & Coordination	Chief, Research & Coordination	Documentation & Information	2/77 - 2/77	Thai	S
Mr. Hong,Ki-Hyung	Chief, Correspondence Ed.	Chief, Correspondence Educ.	APEID (Ed. Tech.	" 3 "	Malay,Singapore, Japan,Thai,Japan	C & Ob
Dr. Kim,Yoon-Tai	Chief Research & Coordination	Chief, Research & Coordination	Ed. Media	3/77 - "	U.S.A.	S
Dr. Shin, Se-Ho	Director R & D Bureau	Director R & D Bureau	Student Eval.	" "	Japan	W

NAME	TITLE	ROLE	CONTENTS	PERIOD	COUNTRY	REMARKS
Mr. Nam,Ouk-Woo	Dep. Director	Deputy Director	Observation (Broad. Sys.)	3/77 - 4/77	U.S.A.	Ob
Dr. Lee,Yung-Dug	Director	Director	APEID (Consult & Eval.)	4 " "	Thai	C
Mr. Chung,Yung-Woong	Engineer	Engineer	Broadcasting Engineering	5 " 6 "	U.S.A.	T
Mr. Yu, Keun-Soo	"	"	"	" "	"	T
Mr. Chang,Doo-Hyung	"	"	"	" "	"	T
Mr. Chang, Un-Hyo	Researcher	Sr. Researcher (Demon.)	Completion of Ph.D	6 8 "	"	T
Mr. Suh,Chung-Wha	"	Researcher (Demonstration)	"	" "	"	T
Mr. Han,Chong-Ha	"	" (Science Ed.)	"	" "	"	T
Mr. Kim,Hyung Rip	"	" (Demonstration)	Instructional System	" "	"	T
Mr. Jun,Sung-Yun	"	" (Innovation)	Ed. Sociology	" "	"	T
Mr. Kim,Young-Chul	"	" (Ed. Policy II)	Ed. Planning	" "	"	T
Mr. Kim,Soo-Il	"	" (Pop. Ed.)	Pop. Ed.	" "	"	T
Mr. Kim,Hyun-Il	Producer (TV)	Producer (TV)	Film Sound Work	" 7 "	Singapore	T
Mr. Si, Kil-Soo	"	"	"	" "	"	T
Mr. Choi,Seung-Hak	Broad. Staff	Cameraman	Film Camera Work	" "	"	T
Mr. An, Jae-Kwon	"	"	"	" "	"	T
Mr. Sung Il-Je	Researcher	Correspondence Ed.	Student Eval.	"	Japan	T
Mr. Park Joon-Yong	Broadcasting Staff(programming)	Programming	ETV Production	7/77 - 4/78	England	T
Mr. Chung Hoon-Sang	"	Planning & Coordination	"	" 10 "	Japan	
Dr. Shin-Se-Ho	Dir. R & D Bur.	Director R & D Bureau	Preliminary Meeting for Minister of Ed.	7/77 - 7/77	Thailand	C & Ob
Dr. Nam,Myung Ja	Sr. Researcher	Researcher	Educational Technology	" 9 "	Japan	C & Ob
Mr. Byun,Yung-Kye	Researcher	"	"	" "	"	C & Ob
Mr. Chung, Hyo Sun	"	"	Production of Radio & TV Programs	8 12 "	Netherlands	T
Mr. Kim,Sung-Hoon	Engineer	Engineer	Techniques & Methods of Production, Radio & TV	11/77 -12 "	Japan	T
Mr. Park,Sung Bae	Broad. Staff	Broadcasting Staff	Production Training of Radio & TV	2/78 - 6/78	Netherlands	T
Mr. Bae, Jong Se	"	"	"	" "	"	T
Mr. Kim, Bong Sik	"	"	Animation Training	6/78 - 8/78	Singapore	T
Mr. Kim,Do Young	"	"	"	" "	"	T
Miss Kang,Un Joo	"	"	"	" "	"	T
Mr. Kim, Jae Ung	"	"	Media of Ed. Broadcasting	7 "	"	T
Mr. Lee,Kyn Ok	"	"	"	" "	"	T
Mr. Lim,Jiu Kyu	"	"	"	" "	"	T

C. KEY PERSONNEL

Board of Trustees

KEDI Title	Name	Occupational Title
Chairman	Park Chan Hyen	Minister of MOE
Committee Member	Chang In Sook	Vice Minister of MOE
"	Lee Yung Dug	KEDI President
"	Lee Hang Yung	President of Hongik University
"	Lee Dai Soon	Director, Office of Planning and Co-ordination MOE
"	Choi Tai Ho	Principal, KyungKee Commercial High School
"	Kim Sang Joon	Director, Office of Promotion of Learning in MOE
"	Lee Sook Jong	National Assembly Woman
Auditor	Song Man Yung	KEDI Standing Member
"	Lee Jai Sun	Director, Elementary Education Bureau of MOE

KEDI STAFF

Position Title	Name	Education	Career	Age
President	Lee Yung Dug	Graduate School of Ohio State University (Ph.D).	Research: 2 yrs. 4 mos. Teaching Profession: 24 yrs. 4 mos. KEDI Presidency: 5 yrs. 8 mos.	51
Vice President	Nam Ok Woo	Graduate School of Seoul National University (M.A)	Research: 6 mos. Teaching Profession: 15 yrs. 9 mos. KEDI Vice Presidency: 5 yrs. 4 mos.	48
Standing Auditor	Song Man Young	Society Development Graduate School of Joogang University (M.A.)	Administration: 17 yrs. 1 mos. KEDI Auditor: 5 yrs. 2 mos.	44
Director, Research and Development Department	Shin Se Ho	Graduate School of Pittsburgh University (Ph.D)	Research: 18 yrs. 4 mos. KEDI: 5 yrs. 10 mos.	41
Director, Educational Broadcasting Development	Shin Kuk Bom	Graduate School of Michigan State University (Ph.D)	Research: 6 yrs. 9 mos. Teaching Profession: 4 yrs. 5 mos Administration: 1 yr. KEDI: 5 yrs. 4 mos.	46
Director, Office of Planning and Coordination	Lim Han Ik	Graduate School of DanKuk University (M.A.)	Research: 10 yrs. Teaching Profession: 14 yrs. 6 mos. Administration: 2 yrs. 1 mos. KEDI: 5 yrs. 3 mos.	51

Director, Administration Bureau	Chung Hai Un	Management Graduate School of Yunsei University (M.A.)	Research: 3 yrs. 2 mos. Teaching Profession: 5 mos. KEDI: 5 yrs. 4 mos.	43
Chief, Educational Policy Study (1) Section	Kim Yoon Tai	Graduate School of Florida University (Ph.D)	Research: 3 yrs. 2 mos. Teaching Profession: 5 mos. KEDI: 5 yrs. 4 mos.	43
Coordinator Educational Policies Study Coordination Section	Kim Chung Hei	Educational Graduate School of Pittsburgh University (Ph.D)	Research: 6 yrs. 2 mos. Teaching Profession: 3 yrs. 5 mos. KEDI: 2 yrs. 2 mos.	38
Chief, Teacher Education Section	Chung Tae Bum	Graduate School of Florida University (Ph.D)	Research: 3 yrs. 7 mos. Teaching Profession: 5 yrs. 5 mos. KEDI: 4 yrs. 6 mos.	41
Chief, Science Education Section	Han Jong Ha	Graduate School of Florida University (Ph.D)	Research: 5 yrs. 8 mos. Teaching Profession: 1 year KEDI: 5 yrs. 4 mos.	38
Senior Researcher, System of Development & Management Section	Chang Un Hyou	Graduate School of Florida University (Ph.D)	Research: 5 mos. Teaching Profession: 6 yrs. 4 mos. KEDI: 5 yrs. 8 mos.	34
Senior Researcher, System of Development & Management Section	Shu Chung Ha	Graduate School of Florida University (Ph.D)	Teaching Profession: 2 yrs. KEDI: 5 yrs. 3 mos.	32
Senior Researcher, in Skill Education	Lee Jung Keun	Graduate School of Ohio State University (Ph.D)	Teaching Profession: 4 yrs. 5 mos.	30

Senior Researcher, Educational Policy Study (2)	Yun Chung Il	Graduate School of Illinois University (Ph.D)	Research: 1 yr. 10 mos. Teaching Profession: 4 yrs. 3 mos. KEDI: 3 yrs.	35
Senior Researcher Educational Policy Study (2)	Lee Jhong Jae	Graduate School of Florida University (Ph.D)	Research: 5 yrs. 6 mos. KEDI: 3 yrs. 1 mos.	34
Broadcasting Consideration Staff	Nam Myung Ja	Graduate School of Oregon State University (Ph.D)	Teaching Profession: 3 yrs. Other: 4 yrs. KEDI: 1 yr. 8 mos.	37
Chief, T.V. Program Production Section	Kim Kyun Joong	New York University (Ph.D)	Interpreter: 1 yr. 8 mos. Other: 7 yrs. KEDI: 1 yr. 5 mos.	40
Planner, Office of Planning & Co-ordination	Koo Hark Bong	Educational Graduate School of Seoul University (M.A.)	Teaching Profession: 7 yrs. 4 mos. KEDI: 5 yrs. 9 mos.	41
Chief, Program Planning Section	Oh Jin Suck	Educational Graduate School of Yunsei University (M.A.)	Teaching Profession: 14 yrs. 1 mos. Publishing Co.: 7 mos. KEDI: 4 yrs. 4 mos.	42
Chief, Social Studies Section	Han Myon He	Educational Graduate School of Yunsei University (M.A.)	Teaching Profession: 11 yrs. 11 mos. KEDI: 5 yrs. 3 mos.	40
Chief, Educational Policy Study (3)	Park Do Soon	Graduate School of Korea University (M.A.)	Teaching Profession: 6 yrs. KEDI: 5 yrs. 9 mos.	36

Chief, Air & Correspondence Studies Section	Hong Ki Yung	Educational Graduate School of Korea University (M.A.)	Teaching Profession: 4 yrs. 5 mos. Other: 5 yrs. 7 mos. KEDI: 2 yrs. 6 mos.	39
Chief, Skill Education Section	Chang Suck Woo	Graduate School of Joongang University (M.A.)	Research: 3 yrs. 5 mos. Teaching Profession: 5 yrs. 7 mos. KEDI: 4 yrs. 7 mos.	39
Chief, Innovation & Diffusion Section	Byun Yung Kei	Educational Graduate School of Seoul University (M.A.)	Teaching Profession: 11 yrs. 6 mos. KEDI: 4 yrs. 9 mos.	39
Chief, Radio Program Production Section	Min Sang Keun	Junior College of Seorabul Arts College	Teaching Profession: 11 yrs. 6 mos. KEDI: 4 yrs. 6 mos.	44
Chief, Administration Section	Chun Chang Un	Graduate School of Korea University (M.A.)	Administration: 14 yrs. 6 mos. KEDI: 4 yrs. 9 mos.	44
Chief, Publication & Print Section	Hong Jin Pyo	Shin Heung Junior College	Public Serviceman: 16 yrs. 9 mos. KEDI: 5 yrs. 8 mos.	45
Chief, Broadcasting Administrative Support Section	Lee Suck Chang	Graduated from Junior College of Kukhak	Administration: 27 yrs. 9 mos. KEDI: 5 yrs.	53
Chief, Engineer Section	Yang Seung Won	Han Yang University (B.A.)	M.B.C. Broadcasting: 9 yrs. 6 mos. Other: 2 yrs. 5 mos.	33

Chief, Art & Set Making Section	Kang Tai Kil	Yunsei University (B.A.)	K.B.S.: 16 yrs. Other: 1 yr KEDI: 2 yrs.	43
Chief, Accounting Section	Bang Ha Yung	Hanheung Public Commercial High School	Military Service: 19 yrs. 1 mos. Company: 8 yrs. 7 mos. KEDI: 5 yrs. 3 mos.	52
Chief, Emergency Planning Section	Kim Tai Jin	Management Graduate School of Korea University (B.A.)	Military Service: 16 yrs. Company: 4 yrs. 2 mos. KEDI: 5 yrs. 7 mos.	51
Chief, Information Section	Park Seung Hai	Graduate School of Korea University (M.A.)	Newspublishing Co.: 10 yrs. 2 mos. Pharmaceutical Co.: 1 yr. 1 mos. KEDI: 4 yrs. 6 mos.	43
Chief, Moral Education Section	Ahn Kyou Dug	Educational Graduate School Seoul University (M.A.)	MOE: 4 yrs. 1 mos. Middle School Supervisor: 5 yrs. Seoul Education Board Committee: 1 yr. KEDI: 7 mos.	41
Chief, Korean Language Section	Lee Byong Ho	Graduate School of Sung Kwin University (M.A.)	Teaching Profession: 21 yrs. 7 mos. MOE: 12 yrs. KEDI: 7 mos.	49
Chief, Industrial Art Education Section	Kwack Sang Man	Administration Graduate School Seoul University (M.A.)	Teaching Profession: 10 yrs. MOE: 5 yrs. Principal: 10 yrs. 1 mos. KEDI: 7 mos.	49

Chief, Mathematics Education Section	Ahn Hwi Jong	Educational Graudate School of Yunsei University (M.A.)	Teaching Profession: 23 yrs. 8 mos. MOE: 5 yrs.	43
Chief, Industrial Art Education Section	Lee Ok	SookMyung Graduate School of SookMyung Women University (M.A.)	Teaching Profession: 12 yrs. 6 mos. MOE: 17 yrs. 6 mos. KEDI: 7 mos.	44
Chief, Population Ed. Section	Kim Soo Il	Graduate School of SungKwin University	Teaching Profession: 8 yrs. Research: 1 yr. KEDI: 4 yrs.	43

APPENDIX 4

A SUMMARY OF THE TENTATIVE LONG RANGE EDUCATIONAL PLAN FOR KOREA

1979 - 1991

AS DEVELOPED BY KEDI

A SUMMARY OF THE LONG RANGE
EDUCATIONAL PLAN FOR KOREA
1979 - 1991
DEVELOPED BY KEDI FOR THE MINISTRY OF EDUCATION[*]

At the request of the Ministry of Education KEDI undertook the task of developing a long range educational plan for Korea covering the period from 1979 - 1991. The plan is viewed as a set of comprehensive guidelines for a major reform of education.

The elements of the plan as developed by KEDI include the following:

1. Major expansion of educational opportunity at the higher education level
    a. The country will be divided into several educational zones in order to provide for a planned and balanced development of higher education in the provinces.
    b. The number of students enrolled in higher education institutions will be increased from the current figure of 400,000 to 1,140,000 in 1991.
    c. A new multi- semester system will be developed to ease the scarcity of professors and facilities.
    d. Higher education institutions will recruit new students (freshmen) on the basis of academic performance in high school instead of the use of entrance examinations.
    e. Five major graduate schools will be developed and the number of graduate students will be increased from the current figure of 22,900 to 111,400 in 1991

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[*] This is a tentative plan under discussion as of 12/31/78 and subject to government modification and approval.

2. Development of comprehensive high schools
    a. A system of comprehensive high schools will be developed thus eliminating the various types of special high schools - academic, technical, agricultural, and commercial.
    b. Middle school graduates will enter the high schools of their choice.
    c. The first year of high school will have a common curriculum, and the following years will permit specialization.
3. Extension of compulsory education
    a. Compulsory education through the middle school will be implemented on a gradual basis from 1982 - 1986, with initial emphasis on rural area.
    b. Beginning in 1987 no tuition will be charged in middle schools.
4. Expansion of pre-school education programs
    a. Kindergarten enrollments will increase from the current 5.2% of the age cohort to 70% by 1991.
    b. Public kindergartens will be built in urban areas; in rural areas kindergartens will be attached to elementary schools.
5. Other areas
    a. The present enrollment of 33% of handicapped children in the schools will be increased to 70% by 1991.
    b. In expanding educational opportunities for the handicapped it is anticipated that it will be necessary to construct 64 new special schools and an additional 2,560 additional classrooms to be attached to the regular public schools.

c. Intensive support will be provided for the education of gifted children, especially in the area of science.

d. Four year radio and correspondence colleges will begin operations in 1982.

e. The enrollment of two-year vocational colleges will be increased from the current figure of 59,000 to 173,000 in 1991, and 60 new vocational colleges will be established.

f. Five four-year teachers universities will be established.

6. Financial investment

The translation of the plan into reality will require a large sum of money. It is recommended that a new education tax be enacted to finance much of the additional costs. If this is not done, it will be necessary for the government to allocate 22% of the annual budget to education by 1991.

In the development of this long range education plan, KEDI enlisted the participation of many individuals. More than 50 seminars were held in the development of the draft of the plan. Over 200 education experts, 150 eminent individuals from all walks of life, and staff of 35 research institutes were involved in the development and review of the plan. Once the draft was completed, it was then reviewed by the Educational Policy Deliberation Council.

Once the plan has been finally reviewed by the Cabinet Council and approved, the final plan will be developed and established as a guideline for educational development from 1979 to 1991.

APPENDIX 5

RADIO AND TELEVISION

A. Radio and Television Equipment

B. Category and Number of Employees/Department of Broadcasting

C. Basic Radio Broadcasting Schedule, First Semester, 1978

D. Sample Radio Program and Objectives for Grades 4, 5, 6

E. Number and Contents of TV Programs Produced at KEDI Studios

F. Weekly Radio Broadcasting Program Sinahn County

G. Content and Number of ITV Programs for Teacher Training

H. Working Draft on Future of Radio and Television

I. Land Based Transmission System

A. RADIO AND TELEVISION EQUIPMENT

RADIO/TELEVISION PRODUCTION AND BROADCAST EQUIPMENT

ITEM	QUANTITY
Installation Equipment	
Voltage regulator	6
Video connector	1,000
Video cable (1000 foot roll)	5
Audio cable (1000 foot roll)	5
Radio Equipment	
Radio receiver	14
Audio control console	3
Tape recorder	30
Turntable	6
Microphone	36
Audio-visual Equipment	
16mm camera (motion picture)	6
Slide projector	4
8mm/16mm projector	3
Screen	3
16mm film processor	1
Sound disc	1,800
Splicer	8
Slide copier	1
Enlarger	1
Television	
Television receiver	76
Video tape recorder	7

ITEM	QUANTITY
Television (cont'd)	
Portable video tape recorder	2
Telecine chain	3
Camera control unit	6
Lighting system	2
Video control switcher	4
Video control system	1
Studio camera	6
Audio control	6
Tape recorder	6
Turn table	6
Monitors	
Video monitor - 25 inch color	4
Video monitor - 17 inch color	10
Video monitor - 12 inch color	1
Video monitor - 14 inch B/W	17
Vectorscope	1
Waveform monitor	12
Test Equipment	
Distortion analyzer	1
Oscilloscope	2
Audio signal generator	2
Volt-ohm-meter	3
Video test signal generator	1
Frequency counter	1
Decibel meter	1
Impedance bridge	1

B. CATEGORY AND NUMBER OF EMPLOYEES

DEPARTMENT OF BROADCASTING

THE NUMBER OF THE REGULAR MEMBERS OF THE BROADCASTING DEPARTMENT BY THE YEARS

(Groups/Yrs.)	'72	'73	'74	'75	'76	'77	June, '78
RESEARCHER				2	12	6	5
BROADCASTING	3	32	50	27	37	55	52
ENGINEERING				29	29	37	36
ADMINISTRATION			2	3	3	3	5
FUNCTIONAL					10	11	11
TEMP. & ETC.					1	1	1
(TOTAL)	3	32	52	61	92	112	110

C. BASIC RADIO BROADCASTING SCHEDULE

FIRST SEMESTER, 1978

BASIC RADIO BROADCASTING SCHEDULE
FIRST SEMESTER, 1978

Broadcast Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
10:00 10:05	Guide to Broadcasting Program and News						
10:15	Moral Ed. 1st Grade	Music 1st Grade	Korean Language 2nd Grade	Music 2nd Grade	Moral Ed. 2nd Grade	Beloved Children	
10:30	Korean Language 3rd Grade	Social Studies 3rd Grade	Music 3rd Grade	Moral Ed. 3rd Grade	Science (general)	Health Ed. (general)	
10:45		Rebroadcast for grade 3			Repeat Science (general)	Repeat Beloved Children	
11:00	Social Studies 4th Grade	Music 4th Grade	Moral Ed. 4th Grade	Korean Language	World Journey (general)	Korean History (general)	
11:15	Rebroadcast for Grade 4				Repeat World Journey	Anti-Communism Ed.	
11:20	Composition Classroom						
11:35	Music 5th Grade	Moral Ed. 5th Grade	Korean History 5th Grade	Social Studies 5th Grade	Korean Language 5th Grade	Special Activities	
11:50	Rebroadcast for Grade 5					Special Activities (Repeat)	
12:00	Great Ancestors						

Broadcast Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
13:00 13:15 13:15 13:15	Appreciation of Music						Weekly News
13:30	Korean History	Korean Language 6th Grade	Music 6th Grade	Moral Ed. 6th Grade	Social Studies 6th Grade	Master-Pieces (literature)	Let's Get Together
13:45	Rebroadcast for grade 6					Teacher Parents Hour	
13:50	English Conversation for Middle school						Teacher and Parents Hour
14:00	English 1st Grade	English 2nd Grade	English 3rd Grade	English 1st Grade	English 2nd Grade	English 3rd Grade	

D. SAMPLE RADIO PROGRAM AND OBJECTIVES

FOR GRADES 4, 5, 6

1978, 1st Semester

4th Grade

Time: 2/3-31/3 10:35 AM-10:50

1/4-22/7 10:45-11:00

THE SOCIAL LIFE (MON.)

MUSIC (TUES.)

MORAL (WED.)

KOREAN LANGUAGE (THUR.)

1978, 1st Semester

4th Grade

THE SOCIAL LIFE

Weed THE SOCIAL LIFE (MON.)

1\.

2. (6/3) BEGINNING THIS SEMESTER

*To know the characters of this subject.

3. (13/3) THE MAIN POINTS OF THIS SEMESTER

*To know the main points of this Semester's course.

4. (20/3) READING MAP. (pp. 14-18)

*To know the symbols for reading maps and to read their local map.

5. (27/3) THE NATURE AND INDUSTRY IN OUR PROVINCE. (pp. 19-25)

*To know the natural surroundings and industrial development of our own provinces.

6. (3/4) CITIES AND THE POPULATIONS IN THE PROVINCE.

*To know the cities and the population in the province.

7. (10/4) TRANSPORTATION AND TELECOMMUNICATION SYSTEM IN THE PROVINCE.

(pp. 31-34)

*To understand the systems in their provinces.

8. (17/4) MAIN CONTENTS OF THE CHAPTER II

*To know the main contents of THE DIFFERENT PARTS OF KOREA.

9. (24/4) LIFE IN THE SOUTH (pp. 40-46)

*To know and understand the life in the south of Korea.

10. (1/5) CITIES AND THE INDUSTRIES IN THE SOUTH. (pp. 47-52)

*To know the big cities in the south and the industries around them.

11. (8/5) NATURE IN THE MIDLAND. (pp. 53-57)

*To know the climate and the weather of the Midland.

12. (15/5) LIFE IN THE CAPITAL AREA (pp. 58-61)

*To understand the development and the relationship of the capital and the surrounding cities.

13. (22/5) LIFE IN THE OTHER AREA IN THE MIDLAND. (pp. 62-70)

*To know the surroundings and the development of the others in midland.

14. (29/5) NATURE AND INDUSTRIES IN THE NORTH. (pp. 71-76)

*To know the characters of the nature and the industries in the north.

15. (5/6) CITIES AND THE LIFE IN THE NORTH. (pp. 77-80)

*To know the cities, transportation system, life and the needs of unification.

16. (12/6) THE LOCATION AND TOPOGRAPHY OF KOREA. (pp. 82-90)

*To know the location of Korea in Asia, and the characters of the topography.

17. (19/6) THE WEATHER, PEOPLE, ANIMAL AND PLANT IN KOREA.

*To know the effect of weather on the people, and others.

18. (26/6) GROWTH, MOVEMENT AND THE PLAN FOR POPULATION. (pp. 102-106)

*To understand the problems from population and the plan for it.

19. (3/7) TRANSPORTATION IN KOREA. (pp. 107-113)

*To know the development of the transportation systems of the land, water and sea, and air.

20. (10/7) FINISHING THE SEMESTER.

21. (17/7) NATIONAL HOLIDAY

(SPECIAL PROGRAMME)

1978, 1st Semester

4th Grade

MUSIC

Week	MUSIC (TUE.)
1.	
2. (7/3)	BEGINNING THE SERIES *To know direction of this course and the studio teacher.
3. (14/3)	TAEGUK FLAG (pp. 2-3) *To sing it with the notes.
4. (21/3)	SPRING WIND (pp. 4-5) *To sing it with the notes and words, with playing rhythm.
5. (28/3)	GREETING THE SPRING (pp. 6-7) *Sing it into a round song with the notes and words.
6. (4/4)	GREETING THE SPRING (p. 7) *To complete a song by connecting 4 measures.
7. (11/4)	TO GREETING THE SPRING (pp. 8-9) *To sing it a duo-chorus and know the joy of cooperation.
8. (18/4)	KOKA SHOES (p. 10) *To sing it in words and notes with playing the beat.
9. (25/4)	KOKA SHOES (p. 11) *To add another two measures to the given one.
10. (2/5)	WORKING SONG (pp. 14-15) *To sing it in notes as the score.
11. (9/5)	ENJOYING MUSIC (pp. 16-17) *To know the characters of folk song and minuette.
12. (16/5)	SING TOGETHER (pp. 18-19) *To know the melody as hearing, and sing it together.

13. (23/5) SPRING (pp. 20-21)

*To play the rhythm as the song.

14. (30/5) CHILDREN'S MARCH (pp. 24-25)

*To play the rhythm as the song.

15. (6/6) THE MEMORIAL DAY

(SPECIAL PROGRAMME)

16. (13/6) IN THE FLOWER GARDEN (p. 26)

*To sing it in notes, as hearing it. And to sing it as a solo.

17. (20/6) BLOWING HORN (p. 28)

*To sing it in notes as the score.

18. (27/6) BLOWING HORN (p. 29)

*To write the rhythm in 8 parts, as hearing it.

19. (4/7) ENJOYING MUSIC (pp. 30-31)

*To understand and enjoy the Korean folk songs.

20. (11/7) CLEANING IN THE MORNING (pp. 34-35)

*To play the flute with the song.

21. (18/7) FINISHING THE SEMESTER.

1978, 1st Semester

4th Grade

MORAL

Week		MORAL (WED.)
1.	(1/3)	NATIONAL HOLIDAY (SPECIAL PROGRAMME)
2.	(8/3)	BRIGHT AND MERRY LIFE *To have the manners for the public, and to keep it.
3.	(15/3)	HEALTHY LIFE (pp. 101-105) *To know the importance of the public health and to keep it.
4.	(22/3)	A BETTER FARMING LIFE WITH THE SAMAUL MOVEMENT (pp. 96-100) *To know the purpose of it and the development of the farms.
5.	(29/3)	TO PLANT A TREE AND TO GROW IT. *To know the importance of the forest resources, and to plant trees.
6.	(5/4)	ARBOUR DAY (SPECIAL PROGRAMME)
7.	(12/4)	THE INHERITED CULTURE FROM OUR ANCESTORS (pp. 79-83) *To know them and to develop them to the future.
8.	(19/4)	KOREAN FLAG ON THE TOP OF HIMALAYA (pp. 20-26) *To have the will to get through the hard times for developing oneself and one's society.
9.	(26/4)	OUR HOME (pp. 69-73) *To know the importance of home and to try to make it as a happy and sweet one.
10.	(3/5)	HEARTS TO HELP EACH OTHER (pp. 106-109) *To help and love the poor neighbours.
11.	(10/5)	WONSUL AND GEN. KIM YUSIN *To know the efforts of our ancestors for the defense of our nation and the people.

12. (17/5) ADMIRAL LEE AND OTHER GENERALS (pp. 58-63)

*To know their love for the nation and the people.

13. (24/5) GENERAL KWAK JAIWOO (pp. 64-68)

*To know the patriotism and the efforts to get over the crisis of our nation.

14. (31/5) JON MYONGUN AND CHANG INWHAN.

*To know their patriotism.

15. (7/6) GENERAL KIM JOAJIN (pp. 129-133)

*To know and to learn the efforts to get over the crisis of the nation.

16. (14/6) SPIRIT OF LEE YULKOK (pp. 74-78)

*To know the spirits of our ancestors, being patriotic to the nation and to respect the old people and the parents.

17. (21/6) COMMUNISTS' EFFORT TO INVADE (pp. 23-27)

*To know their tricks and prepare for their invasion.

18. (28/6) CONFESSION OF A SPY (pp. 110-115)

*To know the superiority of our democratic society, comparing with the northern communist society. And to have anti-communismm.

19. (5/7) ARMY FOR THE PEACE (pp. 90-95)

*To know the jobs of our soldiers, and compare it to the communist army for invasion.

20. (12/7) SADNESS OF NATIONLESSNESS (pp. 84-89)

*To know the importance of the nation, and to defend it from outer invasion.

21. (19/7) "I HATE COMMUNIST"

*To learn the lesson from the invasion tunnels, and the guerrilla.

1978, 1st Semester

4th Grade

KOREAN LANGUAGE

Week KOREAN LANGUAGE (THURS.)

1. (2/3) ENJOYING POETRY (pp. 8-9)

*To enjoy the poetry, written in a structure.

2. (9/3) ENJOYING FAIRY TALES (pp. 12-19)

*To know the mind and action of the character.

3. (16/3) STANDARD LANGUAGE AND THE DIALECT (pp. 22-27)

*To use them with distinction.

4. (23/3) VOWEL AND CONSONANT (pp. 28-35)

*To know the names and the order.

5. (30/3) ENJOYING POETRY (pp. 30-37)

*To enjoy it and be able to write it into a prose.

6. (6/4) DETAIL WRITING (pp. 36-49)

*To write a simple sentence into a detail article.

7. (13/4) FINDING THE MAIN THEME (pp. 43-49)

*To find the main theme from a story.

8. (20/4) CHARACTER (pp. 50-58)

*To know the characters of the person from hearing a story.

9. (27/4) THE COMMA (pp. 50-65)

*To know its function and pay attention when it's seen.

10. (4/5) ENJOYING BIOGRAPHY (pp. 66-71)

*To know the mind of the person.

11. (11/5) ENJOYING NOVEL (pp. 72-81)

*To know the character of the Old novel.

12. (18/5) ENJOYING FAIRY TALE (pp. 82-89)

*To know the goodness of the characters.

13. (25/5) ENJOYING RADIO DRAMA (pp. 90-101)

*To know the change of the hero's mind as hearing it.

14. (1/6) ENJOYING POETRY (pp. 102-111)

*To know the feeling of the poet from it.

15. (8/6) STRUCTURE OF A WORD (pp. 102-111)

*To divide into two words from a combined word.

16. (15/6) THE EXPLANATION WORD (pp. 112-121)

*To know its function and to use it correctly.

17. (22/6) ENJOYING BIOGRAPHY (pp. 122-128)

*To find the mind and action of the character.

18. (29/6) DIRECTING WORD (pp. 122-137)

*To know its function and to use it correctly.

19. (6/7) ENJOYING POETRY (pp. 138-141)

*To know the structure, and to find the mind and hope of the poet.

20. (13/7) WRITING A LETTER (pp. 142-151)

*To know the structure of a letter from its form.

21. (20/7) FINISHING THE FIRST SEMESTER.

1978, 1st Semester

5th Grade

EDUCATIONAL BROADCASTING RADIO PROGRAMME LIST

Time - 2/3-31/3...11:20-11:35
1/4-22/7...11:35-11:50

Subjects: MUSIC (MON.)
MORAL (TUES.)
KOREAN HISTORY (WED.)
SOCIAL LIFE (THURS.)
KOREAN LANGUAGE (FRI.)

1978, 1st Semester

5th Grade

MUSIC

Week MUSIC (MON.)

1.

2. (6/3) TO BEGIN THIS SEMESTER (SAMAUL SONG)

*To know the direction of this course with the studio teacher.

*To sing the song by the note with the strong and weak rhythm.

3. (13/3) ECHO (pp. 4-5)

*To sing it with the right behavior, pronunciation, breath and the beautiful voice.

4. (20/3) AROUND THE TOWN (pp. 6-7)

*To sing it with the note.

5. (27/3) AROUND THE TOWN (pp. 6-7)

*To know the notes and the position of F major.

6. (3/4) VIOLET (p. 8)

*To know the character of the folk song.

7. (10/4) OUR WISHES (p. 9)

*To sing it with the meaning of the words and the 6/8 rhythm.

8. (17/4) LISTENING AND WRITING THE XYLOPHONE DUET (pp. 10-11)

*To understand the changing of tone and can copy the rhythm in 8 parts.

9. (24/4) CHILDREN'S SONG (pp. 12-13)

*To know the meaning of fermata, dynamic signatures. And to sing it with their meanings.

10. (1/5) ENJOYMENT OF MUSIC (pp. 12-13)

*To understand the music and Beethoven, and the character of dancing music and the techniques that used it.

11. (8/5) SING TOGETHER (pp. 16-17)

*To sing a unisong with its meaning of the words and the mood.

12. (15/5) GRASS FLUTE (p. 18)

*To play the 3/8 rhythm and to sing it with the notes.

13. (22/5) GRASS FLUTE (p. 18)

*To complete a rhythm in 8 parts.

14. (29/5) LEAVES (p. 20)

*To understand the legato and staccato style and to sing a duo chorus in beautiful voices.

15. (5/6) PIANO (p. 22)

*To know the structure of harmony in C major and F major, and to feel it.

16. (12/6) SPARROW (pp. 24-25)

*To play the rhythm in 2/4 beat, includes 16th notes, and to sing it with notes.

17. (19/6) MOUNTAIN WIND AND STREAM WIND (pp. 26-27)

*To write the rhythm as hearing the rhythm play.

18. (26/6) BALSAM

*To play the rhythm as the notes of 6/8 beat includes the syncopation. And to sing it in a round song.

19. (3/7) ENJOYMENT OF MUSIC (pp. 30-31)

*Listening the Korean folk songs and music, and to understand the characters, composers, folk songs and instruments.

20. (10/7) FINISHING THE SEMESTER.

*Adjustment and summary

21. (17/7) NATIONAL HOLIDAY

(SPECIAL PROGRAMME)

1978, 1st Semester

5th Grade

MORAL EDUCATION

Week MORAL (TUES.)

1.

2. (7/3) THE RIGHT GREETINGS (pp. 40-45)

*To know the usages of greetings as the situation and to have the kind and cheerful behavior.

3. (14/3) MANNERS (pp. 46-52)

*To know and use the right manners in the life.

4. (21/3) FRIENDS (pp. 66-72)

*To know the manners to the friend and to use it.

5. (28/3) BAD FOODS (pp. 103-107)

*To prevent the poor foods and to guide the body healthy and safely.

6. (4/4) PATRIOTISM OF ADMIRAL LEE SUNSIN (pp. 143-148)

*To learn it from Admiral Lee who sacrificed himself for the people and the nation.

7. (11/4) PATRIOTISM OF THE ANCESTORS (pp. 22-32)

*To learn it from ancestors who have given their lives for the people and the nation.

8. (18/4) THANKS TO THE SOLDIERS (pp. 86-90)

*To thank them for doing the hard jobs for the nation.

9. (25/4) OUR PRESIDENT (pp. 11-15)

*To keep the propriety to our national flag and the president.

10. (2/5) PLEDGING TO THE NATIONAL FLAG (pp. 97-102)

*As people, to know the manners to the flag and to do it in the life.

11. (9/5) VILLAGE, THE EVERGREEN (pp. 33-39, 130-142)

*To cooperate for the development of the local society.

12. (16/5) THE SAVINGS FOR A BETTER LIFE (pp. 60-65)

*To have the habit of saving for a rainy day.

13. (23/5) SCIENTIFIC LIFE (pp. 79-85)

*To try to change the life as a scientific and rational one.

14. (30/5) NATIONAL DEFENCE TRAINING (pp. 53-55)

*To know the meaning and the contents of the national defence training, and to prepare for the invasion of the enemy.

15. (6/6) THE MEMORIAL DAY

(SPECIAL PROGRAMME)

16. (13/6) THE MERIT OF SANGKUK'S FATHER (pp. 123-138)

*To know the brutality of the spy and the guerrilla, and to have the attitude to prevent their invasion.

17. (20/6) LIFE OF THE KOREAN AND JAPANESE IMMIGRANTS TO THE NORTH KOREA AND FROM JAPAN (pp. 128-135)

*To know the miserable life of them and to be aware of the communists lying propaganda.

18. (27/6) PROTECTING THE NATURE (pp. 16-21)

*To protect the common and rate species of nature.

19. (4/7) TEACHINGS OF SAKYA (pp. 73-78)

*To have mercy and forgiveness to the others.

20. (11/7) A HOLY DEATH (pp. 91-96)

*To know the value of human life and to adore it in the life.

21. (18/7) GENERAL D. MACARTHUR (pp. 108-112)

*To learn the will to the peace and happiness for all people.

1978, 1st Semester

5th Grade

KOREAN HISTORY

Week KOREAN HISTORY (WED.)

1. (1/3) NATIONAL HOLIDAY

(SPECIAL PROGRAMME)

2. (8/3) TO START THE SERIES

*To know the character of this subject.

3. (15/3) MAIN THEME OF THE FIRST CHAPTER, AND THE DEVELOPMENT OF THE AGRICULTURE (pp. 10-14)

*To know the main contents of the first chapter and the development of the agriculture.

4. (22/3) DEVELOPMENT OF THE FARMING TOOLS (pp. 14-17)

*To know the development of them in the history till now.

5. (29/3) DEVELOPMENT OF THE WATER SUPPLYING SYSTEM (pp. 17-19)

*To know that it has started quite early.

6. (5/4) THE ARBOUR DAY

(SPECIAL PROGRAMME)

7. (12/4) CLOTHING MATERIALS AND THE AGRICULTURE

*To know the kinds of our ancestors' clothes and the kinds of agriculture for getting them.

8. (19/4) THE USAGE OF FOREST PRODUCTS (pp. 27-30)

*To know the difference, comparing yesterdays and today.

9. (25/4) PRODUCTS FROM EARTH AND WATER (pp. 31-33)

*To know how our ancestors have used the products.

10. (3/5) DEVELOPMENT OF HANDICRAFT (pp. 34-36)

*To know the development of it before the factories began.

11. (10/5) CRAFTSMAN, TECHNICIAN AND PRODUCTS (pp. 37-39)

*To know the change of the treatment of the craftsmen in the late Lee dynasty and their products.

12. (17/5) MARKET AND MONEY (pp. 40-43)

*To know the appearance of market and the usage of money.

13. (24/5) INTERNATIONAL TRADE OF KOREA BEFORE 19TH CENTURY (pp. 40-47)

*To know about the international trade before 19th.

14. (31/5) DEVELOPMENT OF THE MODERN TRANSPORTATION (pp. 54-55)

*To know about modern transportation system since the late 19th till the national independent.

15. (7/6) USE OF THE AQUATIC TRANSPORTATION

*To know the aquatic transportation in the past.

16. (14/6) SENDING MESSAGES THROUGH THE FIRE SIGNAL AND HORSES.

*To know the characters of these primitive communication.

17. (21/6) TELEGRAM AND TELEPHONE (pp. 62-63)

*To understand the situation when they started the telegram and the telephone.

18. (28/6) ORGANIZATION OF THE CENTRAL GOVERNING (pp. 66-68)

*To know the organization of it in the Lee dynasty.

19. (5/7) ORGANIZATION OF THE OLD LOCAL GOVERNMENT (pp. 69-70)

*To know the structure of them.

20. (12/7) THE DUTIES OF THE PEOPLE IN THE PAST AND THE KWAGO EXAMINATION (pp. 71-73)

*To know the important duties of the people in the past and the Kwago examination to be an officer.

21. (19/7) FINISHING THE SEMESTER

1978, 1st Semester

5th Grade

SOCIAL LIFE

Week SOCIAL LIFE (THURS)

1. (2/3) THE WAYS THAT OUR ANCESTORS GOT THINGS (pp. 3-10)

*To know the ways and the things that our ancestors needed in their lives, and the way it has developed.

2. (9/3) DEVELOPMENT OF GOODS PRODUCTION (pp. 11-13)

*To know how the tools have developed and how it helped the production.

3. (16/3) INDUSTRIAL REVOLUTION AND THE EFFICIENCY OF PRODUCING (pp. 14-15)

*To know the differences before and after the revolution.

4. (23/3) VARIOUS INDUSTRIES (pp. 16-20)

*To know that industries are subdivided and its main function.

5. (30/3) INDUSTRIES AND THE JOBS (pp. 21-23)

*To know the various kinds of jobs which occured from the industrial development.

6. (6/4) THE DEVELOPMENT OF FUNCTION AND KIND OF COMMERCE

*To know the kind and function of commerce and its development.

7. (13/4) MARKET, STORE AND PRICE (pp. 28-30)

*To understand the function and the kind of market and store, and the seasonal facts effecting the price.

8. (20/4) FOREIGN TRADE (pp. 31-32)

*To know the reason for foreign trading and the profits from it.

9. (26/4) DEVELOPMENT AND THE FUNCTION OF THE CURRENCY (pp. 36-37)

*To know the procedure of the development and the function of the currency.

10. (4/5) MONETARY CIRCULATION AND THE BANKING ORGAN (pp. 38-41)

*To know the meanings of monetary circulation and the kind of savings and its function.

11. (11/5) THE PURPOSE OF THE CO-OPERATIVE UNION AND ITS WORK (pp. 42-44)

*To know the purpose and works of the co-operative union.

12. (18/5) FUNCTION OF THE INSURANCE (pp. 44-45)

*To know the effect of it to the life and its kind, the way to use it.

13. (25/5) TRANSPORTATION AND ECONOMY (pp. 46-47)

*To know the effect of the transportation and the telecommunication systems to the economy.

14. (1/6) HOUSEKEEPING AND FINANCE (pp. 48-52)

*To know their meanings and the management for a better life.

15. (8/6) NEEDS TO DEVELOP ECONOMY (pp. 53-56)

*To understand the situation before the economic developing plan, and the needs of the plan.

16. (15/6) THE 1ST, 2ND, AND 3RD ECONOMIC DEVELOPING PLANS

*To know about those plans.

17. (22/6) THE RESULTS OF THOSE PLANS

*To know the results of those plans.

18. (29/6) THE ECONOMIC PLAN FOR THE FUTURE (pp. 59-61)

*To know what's in the 4th plan and the economy in the 1980's.

19. (6/7) OUR LIVES ARE GETTING BETTER (pp. 62-65)

*To know the lives which are getting better with the economic plans.

20. (13/7) ECONOMY OF THE COMMUNIST IN THE NORTH KOREA

*To compare the economy of the North Korea to the South.

21. (20/7) FINISHING THE SEMESTER

*SUMMARY AND ADJUSTMENT

1978, 1st Semester

5th Grade

KOREAN LANGUAGE

Week		KOREAN LANGUAGE (FRI.)
1.	(3/3)	HOW TO DISCUSS (pp. 8-12) *To discuss things in the order and the rules.
2.	(10/3)	WRITING MESSAGE (pp. 8-21) *To write a message in the form.
3.	(17/3)	GETTING THE POINT OF AN ARTICLE *To be able to say the main points, hearing an article.
4.	(24/3)	ENJOYING POETRY (pp. 22-25) *To know the rules in poetry and to be able to find the main theme.
5.	(31/3)	ENJOYING NOVEL (pp. 26-35) *To know the mood and the character from their dialogue.
6.	(7/4)	DRAWING LINES IN AN ARTICLE (pp. 38-45) *To distinguish the outside matter and the inner mind matter.
7.	(14/4)	SUBJECT AND PREDICATIVE (pp. 38-49) *To find the subject and the predicative in a sentence.
8.	(21/4)	ENJOYING BIOGRAPHY (pp. 50-59) *To show the works of the hero.
9.	(27/4)	ENJOYING BIOGRAPHY (pp. 60-71) *Reading one and to find the appealing scene.
10.	(5/5)	CHILDREN'S DAY (SPECIAL PROGRAMME)

11. (12/5) READING (EMOTIONAL) (pp. 72-85)

*To read emotionally with the situation and the character in a play.

12. (19/5) ROOT OF A WORD (pp. 86-103)

*To find the root of the word from a moving and tensed form.

13. (26/5) WRITING A READING REPORT (pp. 94-104)

*To write a book report in the form.

14. (2/6) ENJOYING BIOGRAPHY (pp. 104-111)

*To know the hero's actions are affected by his character.

15. (9/6) CONNECTING SENTENCES (pp. 104-121)

*To connect the two sentences into one, using the proper word.

16. (16/6) ENJOYING A NOVEL (pp. 122-133)

*To talk the main facts of one to an audience.

17. (23/6) WRITING A REPORT (pp. 122-133)

*To write a book report after reading a novel.

18. (30/6) ENJOYING NOVEL (pp. 134-156)

*To know the character's minds from their actions and languages.

19. (7/7) ENJOYING NOVEL (pp. 134-153)

*To know the motivations and the result of an action.

20. (14/7) WRITING A GREETING LETTER

*To write a thanks letter to the one who helped.

21. (21/7) FINISHING THE SEMESTER.

1978, 1st Semester

6th Grade

EDUCATIONAL BROADCASTING RADIO PROGRAMME LIST

Time - 2/3-31/3...13:45-14:00
1/4-22/7...13:15-13:30

KOREAN HISTORY (MON.)

KOREAN LANGUAGE (TUES.)

MUSIC (WED.)

MORAL (THURS.)

SOCIAL STUDIES (FRI.)

1978, 1st Semester

6th Grade

KOREAN HISTORY (MON.)

Week

1.

2. (6/3) STARTING THIS SERIES

*Knowing the character of this subject programmes.

*The main contents of this semester.

3. (13/3) MAIN CONTEXT OF THE CHAPTER 1 (pp. 8-11)

*"Chapter I, The Beginning of the Korean History." Explanation about this chapter and encourage them to study the history.

4. (20/3) SOCIAL LIFE IN THE ANCIENT (pp. 12-14)

*To understand the remains and the stone tools of the ancient age, and look about the developed family society.

5. (27/3) USING THE BRONZE WARE AND THE FORMATION OF THE ANCIENT CHOSUN (pp. 15-16)

*To know the formation of the Ancient Chosun is first tribe nation, and they were of the Bronze Age.

6. (3/4) TRIBAL NATIONS OF THE NORTH AND THE SOUTH, AND THE INVASION OF CHINESE HAN (pp. 17-19)

*To know about the tribal nations which were in the Korean peninsula and Manchuria following the Ancient Chosun, and the changed results after the Han's invasion.

7. (10/4) FORMATION AND THE DEVELOPMENT OF THE THREE NATIONS

*To understand the details for the formation and the development of the ancient kingdoms.

8. (17/4) DEVELOPMENT OF KOGURYO, BAGJE, AND SHINLA (pp. 25-30)

*To know the Koguryo's repulse of the invasion from the continent.

*In competing each other, how Bagje and Shinla developed themselves.

9. (24/4) SOCIAL LIFE DURING THE THREE-NATIONS AGE (pp. 31-35)

*To look about the characteristic organization, culture, and economic development.

10. (1/5) THE UNIFICATION OF THE THREE NATIONS AND THE UNIFIED SHINLA (pp. 35-42)

*To know the historical meaning and the details for the unifying three nations by Shinla.

*To know the traces of Shinla's unification and development of economy and culture.

11. (8/5) FOREIGN POLICY AND ACTIVITIES OF THE PEOPLE OF SHINLA (pp. 39-40)

*Look about the foreign activities of the Korean Ancient people after the unification.

12. (15/5) FOUNDING OF KORYO AND BALHAI (pp. 43-46)

*To know the details of founding and the developing of Balhai which was founded by our ancestors, and the decline of Shinla and founding of Koryo.

13. (22/5) THE RELATIONSHIP BETWEEN KORYO AND CHINA (pp. 32-54)

*Understanding the relationship between Koryo and China.

14. (29/5) SOCIAL LIFE AND THE POLITICAL AGITATION (pp. 55-57)

*To understand that Koryo had developed cultures for a long time, but the agitation had begun in the politics.

15. (5/6) INVASION OF MONGOLS AND THE INDEPENDENT MOVEMENT OF KING KONGMIN (pp. 58-60)

*The formation of Mongols, invasion to Koryo and the resistance and independent movement of Koryo.

16. (12/6) THE LAST OF KORYO (pp. 61-65)

*To know the trials that led Koryo to the destruction.

17. (19/6) FOUNDING OF CHOSUN AND THE NEW POLITIC ORGANIZATION (pp. 71-72)

*To know what are the basic plans for the early Chosun and what kind of organization they made.

18. (26/6) CULTURAL DEVELOPMENT AND THE GREAT SEJONG (pp. 71-72)

*Understanding the works of Sejong, the Great.

19. (3/7) THE SOCIETY AND IS ORGANIZATION OF THE EARLIER CHOSUN (pp. 73-77)

*The structure of the Chosun society and the effects of the Confucianism.

20. (10/7) FINISHING THE FIRST SEMESTER

*Adjustment of this semester.

21. (17/7) CONSTITUTION COMMEMORATION DAY

(SPECIAL PROGRAMME)

1978, 1st Semester

6th Grade

Week KOREAN LANGUAGE (TUES.)

1.

2. (7/3) ENJOYMENT OF THE BIOGRAPHY (pp. 3-5)

*Able to tell the character and its tendency.

3. (14/3) ENJOYMENT OF THE BIOGRAPHY (pp. 16-27)

*To understand a person's biography and able to write an appreciation report.

*To enjoy a biography by following the hero's action and mind.

4. (21/3) HOW TO READ BOOKS (pp. 28-33)

*The effective ways of reading.

5. (28/3) ENJOYMENT OF NOVEL (pp. 34-35)

*Able to tell the character of the hero with his language and action.

6. (4/4) EFFECTIVE EXPRESSION (pp. 46-49)

*Able to find the effective expression which shows the author's mind.

7. (11/4) CONNECTING SENTENCES (pp. 50-59)

*To write a connected sentence using the words structure.

8. (18/4) TRAVEL DESCRIPTION (pp. 60-71)

*To tell the structure of the travel description.

9. (25/4) UNDERSTANDING THE ACTION (pp. 72-85)

*To distinguish the author's movement from the novement of train or boat.

10. (2/5) ENJOYMENT OF THE KOREAN ODE (pp. 86-89)

*To find the main theme from the ode.

11. (9/2) LISTENING SKILL (pp. 90-101)

*To remember the main point after listening to the programme.

12. (16/5) STRUCTURE OF THE EXPLANATIVE DESCRIPTION (pp. 102-109)

*To understand it as its beginning, middle and the ending.

13. (23/5) SUMMARIZING (PP. 110-117)

*To write the main points according to their historical order.

14. (30/5) FINDING MESSAGE (pp. 118-121)

*To know the message of the author

15. (6/6) "MEMORIAL DAY"

(SPECIAL PROGRAMME)

16. (13/6) WRITING THE APPRECIATION REPORT (pp. 132-145)

*To write one after listening to a novel.

17. (20/6) MESSAGE FINDING (pp. 146-155)

*To find the author's opinion from the description.

18. (27/6) DIVIDING SENTENCE

*Able to divide a sentence into two.

19. (4/7) DETAIL WRITING (pp. 158-165)

*To write a simple sentence into a detailed one.

20. (11/7) OPINION WRITING (pp. 166-175)

*To write an opinion after listening to a report.

21. (18/7) FINISHING THE SEMESTER

*Summary and adjustment.

1978, 1st Semester

6th Grade

MUSIC

Week		MUSIC (WED.)
1.	(1/3)	(NATIONAL HOLIDAY) (SPECIAL PROGRAMME)
2.	8/3)	BEGINNING THIS SERIES *To know the studio teacher and the direction of this series.
3.	(15/3)	SONG OF KOREA (p. 2) *To sing with the meaning of the words, and to know about the composer, Mr. Hyon Jemyong.
4.	(22/3)	FORWARD, FORWARD (p. 3) *To understand the musical scale of G major and be able to sing with the written scale.
5.	(29/3)	THE WALKING SONG (pp. 4-5) *To play the rhythm with singing the chorus.
6.	(5/4)	(ARBOUR DAY) (SPECIAL PROGRAMME)
7.	(12/4)	KUMKANG MOUNTAIN (pp. 8-9) *To sing the G major scale song with its scale.
8.	(19/4)	SOUND OF BELL (p. 10) *To finish singing trio chorus, and feel the beauty of the harmony.
9.	(26/4)	LULLABY (pp. 12-13) *To understand and enjoy the lied and sing along the part of it.
10.	(3/5)	SING TOGETHER *To sing the unison and the solo with its meaning of the words and its feeling.

11. (10/5) SPRINGTIME IN THE HOME TOWN (p. 16)

    *To sing the song as a harmony chorus.

12. (17/5) SOUND OF MUSIC (p. 18)

    *To sing the song as a troll and feel the harmony.

13. (24/5) HARVEST SONG (pp. 20-21)

    *Grasp the characters of Korean folk song from its rhythm.

14. (31/5) THE GREEN SEA (p. 22)

    *See the character of its rhythm and to sing the duo-chorus, and feel the beauty of harmony.

15. (7/6) GREEN GRASS (p. 25)

    *To understand the scale, C major, G major, F major, A major and harmony.

16. (14/6) FOREST LANE (p. 26)

    *To sing with its scale and to understand the A minor song's character.

17. (21/6) ENJOYMENT OF MUSIC (p. 27)

    *To listen and enjoy the Korean instrumental music.

18. (28/6) SUMMER (p. 30)

    *To play the rhythm with its 3/4 beat including the trifle notes, and to sing with the notes.

19. (5/7) ENJOYMENT OF MUSIC (pp. 32-33)

    *To understand and enjoy the Pansori and opera, and their composers.

20. (19/7) FINISHING THE SEMESTER

    *Summary and adjustment.

1978, 1st Semester

6th Grade

MORAL

Week MORAL (THURS.)

1. (2/3) BEING A HIGHEST GRADE STUDENT (pp. 8-9)

   *To realize the duty and the job as one of the highest students in school, then to work faithfully for oneself and the school.

2. (9/3) MANNERS AND ITS BASIC SPIRIT (pp. 33-38)

   *To know the basic spirit and learn good manners to behave oneself in everyday life.

3. (16/3) HONEST AND FAITHFUL LIFE (pp. 10-16)

   *To live with the honesty and faith.

4. (23/3) THE ART AND THE LIFE OF KIM HONGO (pp. 76-83)

   *To know the life of art of Kim Hongo, loves and cares art.

5. (30/3) THE FRUGAL LIFE FOR OUR BEING SELVES (pp. 17-21)

   *To understand our situation, and the frugal life makes a nation wealthy.

6. (6/4) THE SUCCESSFUL CASES OF THE NEW VILLAGE MOVEMENT (pp. 100-107)

   *To learn the will to over the difficulties through the successful cases.

7. (13/4) MONEY SAVING AND THE SELF CO-OPERATION (pp. 108-113)

   *To know the needs of savings and to do it.

   *The virtue of helping each other.

8. (20/4) LOVE OF JESUS CHRIST (pp. 50-54)

   *To learn the love of Christ, loves others and sacrifice for them.

9. (27/4) DR. SHEWIZER AND THE SERVICE ACTIVITIES (pp. 55-62)

   *As his service spirit, to help the poor neighbors.

10. (4/5) CHILDREN'S DAY AND THE HUMAN ACTIVITIES (pp. 55-62)

*To know the human dignity, help neighbors and the poor, and to love people.

11. (11/5) NATIONAL DEFENCE AND THE SOLDIERS (pp. 84-93)

*To know, admire and thanks to the duty of the soldiers.

12. (18/5) THE PATRIOTISM OF ADMIRAL LEE SUNSIN (pp. 143-152)

*Through his life, the devotion for the nation and the people can be the model for sacrificing for the nation.

13. (25/5) THE SPIRIT OF INDEPENDENT AND THE PATRIOTISM (pp. 130-136)

*To learn the spirits of Dosan, and Changho.

*To think for the nation and the society, and fight for the right

14. (1/6) DEVELOPING ONESELF IS FOR DEVELOPING NATION

*To know the relationship between me and my nation, and cooperate for developing nation.

*To remember the sadness of people without a nation, and think about the importance of national defense.

15. (8/6) LAW AND THE SPIRIT OF OBEYING LAWS (pp. 153-158)

*To know the need of laws and order, and to know the advantages of the Yusin Constitution, obeying them.

16. (15/6) OUR TRADITIONAL CULTURE AND THE PRIDE (pp. 69-75)

*To understand the value of our traditional culture, and to keep it and develop it with pride and confidence.

17. (22/6) ANGER ABOUT THE BRUTALITY OF THE COMMUNISTS (pp. 114-129)

*To know the brutality of the communist in the North Korea, and to have the will to save the people from them.

18. (29/6) KOREAN CIVIL WAR AND THE U.N. TROOPS (pp. 94-99)

*To know the details of the war, the situation and to have the will to defend the nation.

19. (6/7) THE SUPERIORITY OF DEMOCRACY (pp. 22-32)

*To realize the superiority of democracy from the people who escaped from the communism. And to have the will to develop the democracy.

1978, 1st Semester

6th Grade

SOCIAL STUDIES

Week SOCIAL STUDIES (FRI.)

1. (3/3) BEGINNING THIS SERIES

*To know the characters of this subject.

*To know the contents of this semester course.

2. (10/3) MAIN SUBJECT OF THE CHAPTER I (pp. 8-10)

*To know the main contents of the chapter I, Democracy and the Social Life, and its importance.

*To know that a man can't live without a society, which we call the society.

3. (17/3) VARIOUS COMMUNITIES (pp. 11-15)

*A man consists in lots of communities and they have their own characters.

4. (24/3) BASIC SPIRIT OF DEMOCRACY (pp. 16-19)

*To understand the basic spirit of democracy.

5. (31/3) DEVELOPMENT OF DEMOCRACY (pp. 20-21)

*To know where it has begun, and how did it develop till now.

6. (7/4) DEMOCRACY IN MANY COUNTRIES (pp. 22-23)

*To understand the characters of it in U.K., France and the U.S.A.

7. (14/4) DEMOCRACY AND COMMUNISM (pp. 24-26)

*To realize the advantages and the superiority of democracy, comparing it to communism.

8. (21/4) PEOPLE'S SPIRIT AND THE DUTY TO THEIR SOCIETY (pp. 27-30)

*To realize the duty and the rules for the members to make a better society.

9. (28/4) PUBLIC MORALITY AND PUBLIC BENEFIT (pp. 31-33)

*To understand the needs and the context of them.

10. (5/5) (CHILDREN'S DAY)

(SPECIAL PROGRAMME)

11. (12/5) TRACES OF THE REPUBLIC OF KOREA (pp. 37-38)

*To know the road that our government have walked since the 3.1 movement in order of time.

12. (19/5) THE YUSIN CONSTITUTION (pp. 39-40)

*To understand the changes of our constitution from the first one.

13. (26/5) DUTY AND RIGHT OF THE PEOPLE (pp. 41-48)

*To understand the rights of people, written in the constitution

14. (2/6) TO KEEP THE DUTY AND THE RIGHT OF THE PEOPLE (pp. 49-50)

*To keep those to in balance can develop the nation as a democratic one.

15. (9/6) THE POWER DIVIDING AND THE PEOPLES UNIFICATION CONFERENCE (pp. 51-

*To know the reason of dividing the power of a nation, and the organization and the duty of the Conference.

16. (16/6) THE POSITION AND THE DUTY OF THE PRESIDENT (pp. 55-56)

*To understand the position, election, and the duty of it.

17. (23/6) ORGANIZATION AND FUNCTION OF THE GOVERNMENT (pp. 57-58)

*To know the main organs and their duties.

18. (30/6) ORGANIZATION AND THE FUNCTION OF THE PARLIAMENT (pp. 59-60)

*To understand the organization and the main work of the members.

19. (7/7) ORGANIZATION AND FUNCTION OF THE COURT

*To know the function and the organization of it.

20. (14/7) LOCAL SELF-GOVERNMENT, POLITICAL PARTIES, AND THE ELECTION (pp. 63-65.)

*To know the system of them.

21. (21/7) FINISHING THE SEMESTER

*Adjustment and summary

E. NUMBER AND CONTENT OF TV PROGRAMS PRODUCED AT KEDI STUDIO

NUMBER OF TV PROGRAMS PRODUCED AT KEDI STUDIO

(1976-1977)

TARGET AUDIENCE	PROGRAMS	DURATION	'76	'77	TOTAL
Elementary School	3,4,5,6 Grade	15-20	222	152	374
Middle School	English Science	20	6	-	6
Teacher Training		15	56	163	219
ENVIRONMENT SUPPLEMENTARY PROGRAMS FOR CHILDREN	Good Boy, Pretty Girl (Moral Ed.)	15	22	17	39
	Prep. & Environment Ed.	15	6	16	22
	Basic Science	15	11	27	38
	Anti-Communism Ed.	15			
	Moral Ed.	15	-	19	19
	Moral Ed. (Sun-Flower Family)	15	-	19	19
	Camera Interview	15	-	3	3
	Etiquette	10	30	8	38
	Famous Tales	10	-	52	52
	The World of Poems	5	-	26	26
	Why?	5	-	26	26
Sub Total	-	-	83	219	302
OVERSEAS FILM	Ed. Broad. Library	10	-	228	228
	Zoo	15	-	38	38
	Beautiful World	15	-	38	38
	World Journey	15	-	38	38
	Our Body	15	-	38	38
	Secret of the Sea	15	24	38	62

	PROGRAMS	DURATION	'76	'77	TOTAL
OVERSEAS FILM	Television Theatre	18	-	38	38
CONTINUED	Etc.		27	125	152
Sub Total			51	581	632
MISCELLANEOUS	The Procedure of TV Production		1	1	2
	CEPTA - TV Joint Pros.			3	3
Sub Total			1	4	5
GRAND TOTAL			419	1,119	1,538

CONTENT OF THE ITV PROGRAM

1976 - 1977

GRADE SEMESTER	3rd		4th		5th		6th		Sub Total		Total
SUBJECT	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	
MORAL	6	6	5	6	4	7	5	3	20	22	42
KOREAN LANGUAGE	8	8	8	5	5	4	3	5	24	22	46
MATHEMATICS	6	6	4	5	5	4	2	3	17	18	35
SOCIAL STUDIES	8	12	6	10	6	16	3	4	23	42	65
SCIENCE	5	6	5	7	8	5	1	5	19	23	42
MUSIC	4	6	5	5	4	5	3	3	16	19	35
FINE ARTS	6	6	7	10	7	7	5	5	25	28	53
PHYSICS	1	6	-	8	2	11	-	3	3	28	31
VOCATIONAL ED.	-	-	5	4	4	5	3	4	12	13	25
SUB TOTAL	44	56	45	60	45	64	25	35	159	215	374

F. WEEKLY RADIO BROADCASTING PROGRAM

SINAHN COUNTY

WEEKLY RADIO BROADCASTING PROGRAM
SINAHN COUNTY

School Class Time	Broadcast Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	8:50 9:00	Pleasant Morning					
	9:05	Guide to Broadcast Program					
I	9:20	The Hour for Meditation					
9:10 9:55		Class for Grade 3					
		Moral Educ.	Korean Lang.	Social Studies	Music	Korean History	People who Shone Light
	10:00	Rebroadcast					
II	10:15	Administrative Program 1					
10:05 10:50		Class for Grade 4					
	10:30	Music	Moral Educ.	Korean Lang.	Social Studies	Korean Lang. 6	Art
	10:50	Rebroadcast					
III	11:05	Interval Play					
11:10	11:20	English Class					

School Class Time	Broadcast Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
11:50		Class for Grade 5					
	11:35	Korean Lang.	Music	Moral Educ.	Korean Lang.	Social Studies	Let's get Together
	11:50	Rebroadcast					
	12:10	English Rebroadcast					
lV		Class for Grade 6					
12:00	12:25	Social Studies	Korean Lang.	Korean Hist.	Moral Educ.	Music	Admin. Prog. # 2
12:40	12:40	Rebroadcast					
Lunch	13:00	With Music					
	13:10	Hour for Meditation--rebroadcast					
	13:25	Music Appreciation					
		THE ECHO OF BLUE DREAMS					
	13:40	A village of rainbows			That's Ours		
V	13:55	Class for Grade 5--rebroadcast					
13:40	14:10	Class for Grade 6--rebroadcast					
14:20	14:25	English Rebroadcast					

School Class Time	Broadcast Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Vl 14:20 15:25		Home Room Period--No broadcast					
Vll	15:25 15:45	HOUR FOR TEACHERS Music Appreciation		Explanation of Opera			
	16:00	SAEMAUL PROGRAM Broadcast	Rebroadcast	CLASS DESIGNS Broadcast	Rebroadcast	Rebroadcast	
	16:20	Administrative Program 2					
	16:50	EDUCATION EVALUATION Broadcast	Rebroadcast	TEACHER TRAINING Broadcast	Rebroadcast	Rebroadcast	
17:00	17:00	Guide to tomorrow's Program					

CONTENT AND NUMBER OF ITV PROGRAMS FOR TEACHER TRAINING

(Unit= 15 Min.)

		'76	'77	Total
	General	3	5	8
	Instruction	5	20	25
	Diagnosis & Evaluation	-	20	20
	Instructional Design	-	10	10
	General Ed.	-	14	14
	Teacher Ed. Subject	-	16	16
	Schweil Management & Innovation	-	9	9
	Sub-Total	8	94	
SUBJECT	Korean Language	6	7	13
	Arithmetic	8	5	13
	Social Studies	7	6	13
	Science	2	11	13
	Fine Arts	8	5	13
	Music	3	10	13
	Physics	6	7	13
	Vocational Ed.	-	13	13
	Moral	8	5	13
	Sub-Total	48	69	117
	Grand Total	56	163	219

H. WORKING DRAFT* ON FUTURE OF RADIO AND TELEVISION

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* The future role of radio and television in the KEDI instructional model is yet to be determined. The attached paper is a working draft and is presented in its entirety as submitted by the KEDI staff.

Mid Long-Term Plan for Development of TV Programs (Draft)

Korean Educational Development Institute

Mid long-Term Plan for Development of TV Programs
(Draft)

I. Need for Educational Broadcasting

1. The educational value of TV is increasing
2. With rapid population growth, a large proportion of people are out of the reach of education
3. Regional disparity in education quality is wide
4. The existing mass media are do not serve educational functions

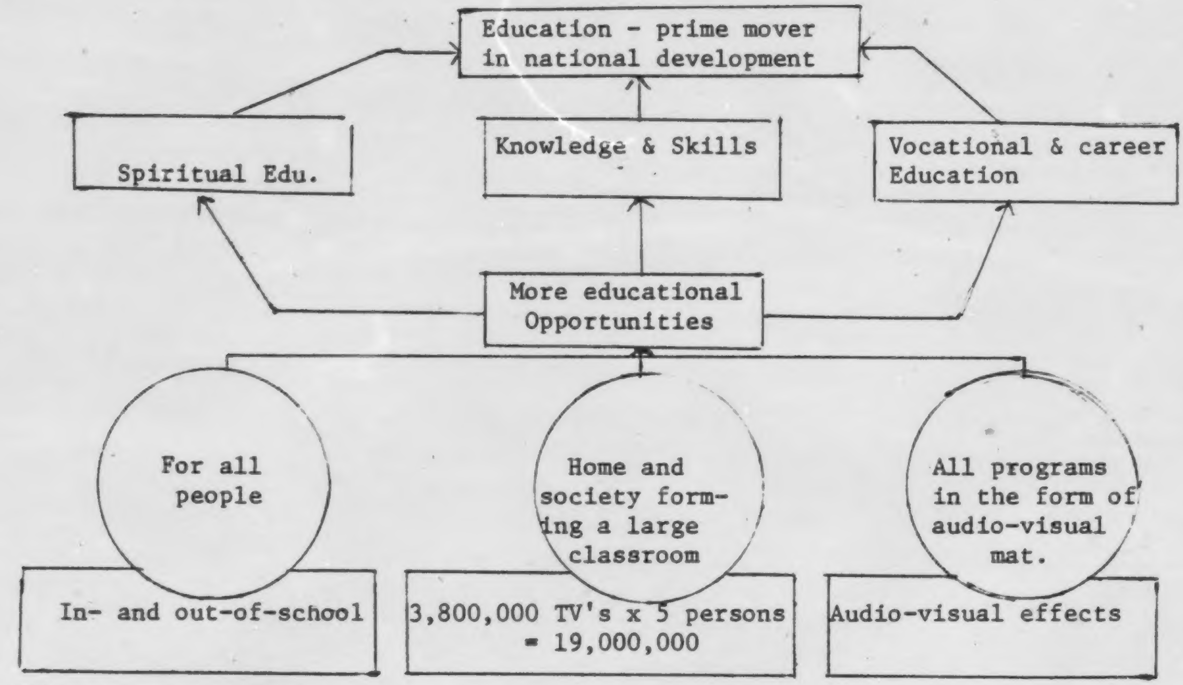
II. The Goals of Educational Broadcasting

1. To enhance the consciousness of national identity
2. To strengthen technical education
3. To expand educational opportunity
4. To effect the qualitative improvement of education

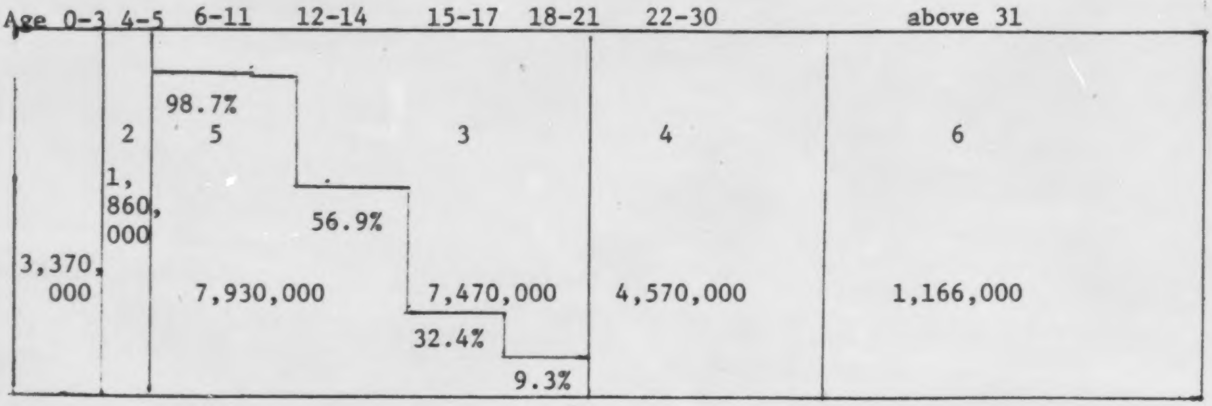
The characteristics of TV

- o Adaptability to rapidly changing society
- o Reliability of information and knowledge
- o Uniformity useful for developing the consciousness of community
- o A vast number of clienteles
- o Specific presentation of content through audio-visual media
- o Openness in imparting knowledge
- o Time accuracy provided by operation plan

III. Educational Broadcasting Strategy


Education - prime mover in national development
Spiritual Edu.
Knowledge & Skills
Vocational & career Education
More educational Opportunities
For all people
Home and society forming a large classroom
All programs in the form of audio-visual mat.
In- and out-of-school
3,800,000 TV's x 5 persons = 19,000,000
Audio-visual effects

IV. Target Audience



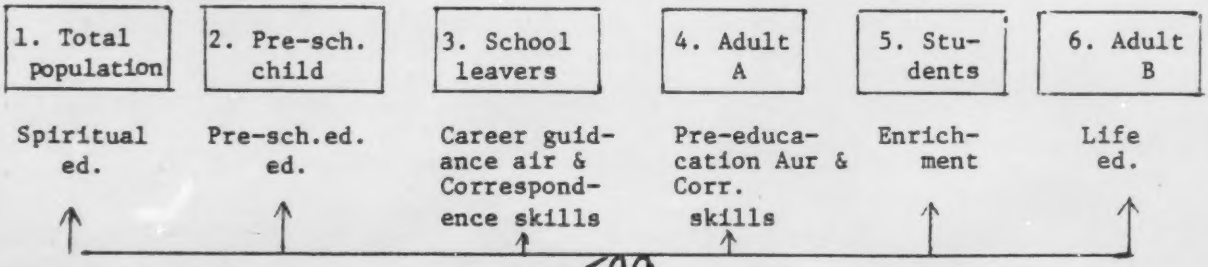
School age population (6 - 21) : 15,400,000
- The enrolled : 7,930,000
- School leavers : 7,470,000

Pre-school children (0 - 3) : 3,370,000 → not incl. in broadcasting prog

Adult A (22 - 30) : 4,570,000

Adult B (Above 31) : 11,660,000

Total 35,000,000


1. Total population
2. Pre-sch. child
3. School leavers
4. Adult A
5. Students
6. Adult B
Spiritual ed.
Pre-sch.ed. ed.
Career guidance air & Correspondence skills
Pre-education Aur & Corr. skills
Enrichment
Life ed.

V. The content of Educational Broadcasting

1. Content outline

a. Spiritual education

- o Education of national identity
- o Value education
- o anti-communism education

b. Pre-school education

- o Development of righteous habits
- o Intellectual development
- o Emotional Development

c. Education for adolescent school leavers

- o Air and correspondence high school
- o Air and correspondence college
- o Career guidance program
- o Technical education

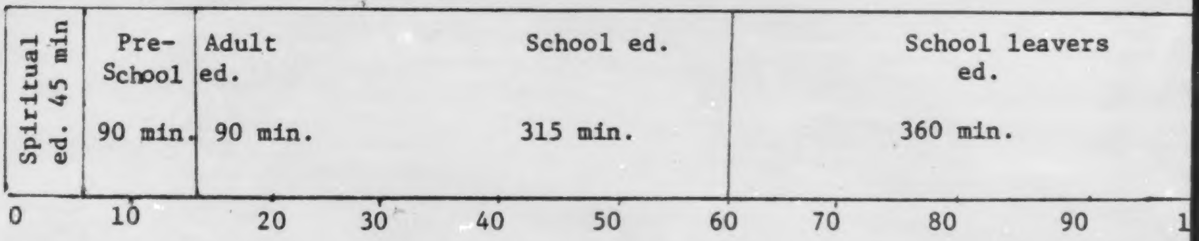
d. School education

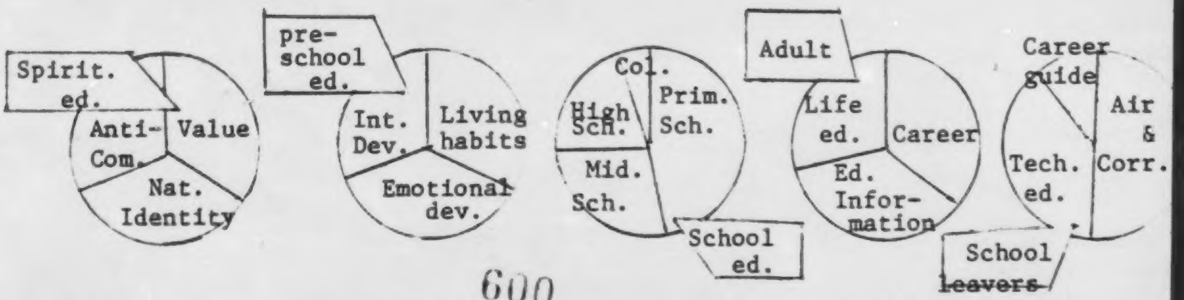
- o Elementary education
- o Secondary education
- o Higher education
- o Teacher education

e. Adult education

- o Parent education
- o Life education
- o Information services

Broadcasting time (15 hrs.)

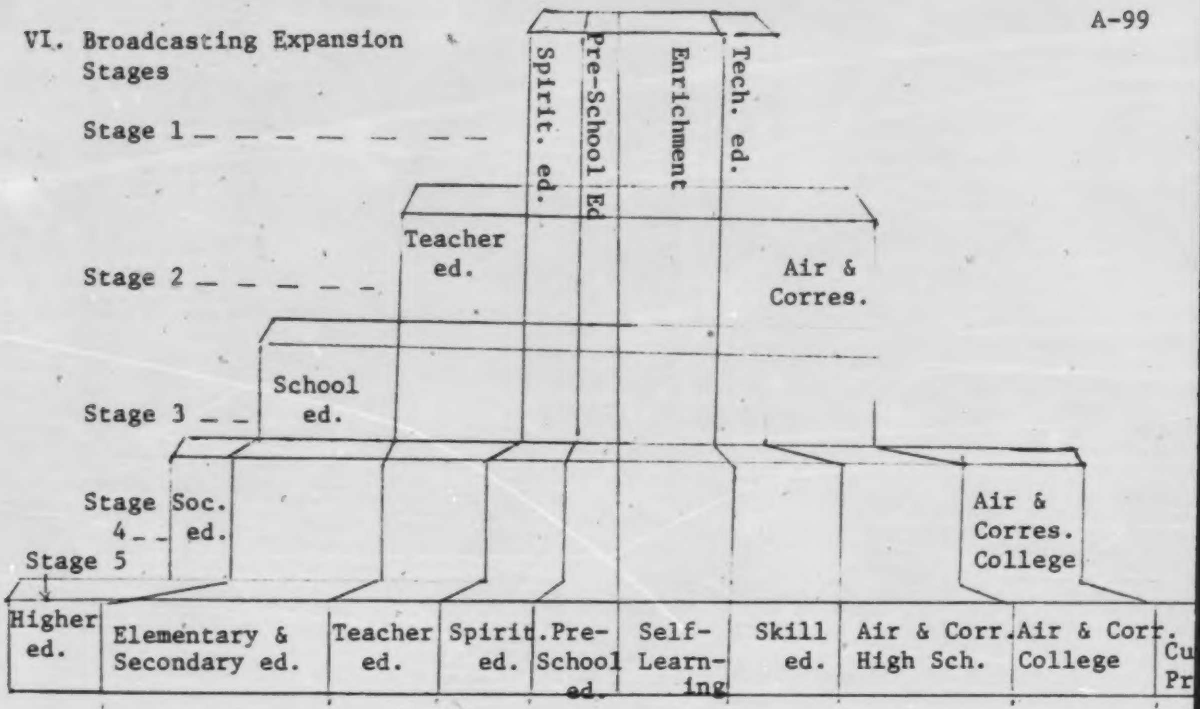




Content Specification

Areas	Audience	Objectives
Spiritual ed.	35 million people	o To increase the consciousness of national identity o To develop an understanding of individual responsibility in the context of social and nation's needs.
Pre-school ed.	1,860,000 children four - five years of age	o To direct the spiritual posture of all people toward national development o To provide the basis for formulation of sound character by facilitating intellectual, social and emotional development
School ed. program (for enrichment	15 million students	o To develop basic learning ability, basic concepts, inquiry learning skills and problem-solving ability
Air and corr. ed.	13 million school leavers aged from 15 - 21	o To enlarge educational opportunity for school leavers o To improve the quality of air and corres. ed.
Technical ed.	13 million youth aged from 15 - 21	o To equip youngsters with skills directly linked to employability o To improve the quality of technical ed.
Teacher ed.	200,000 teachers	o To increase teacher's competency and quality by making the maximum utilization of broadcasting media in teacher education
Others	o Physically handicapped children o Parents o Adults	o To increase the effect of special ed. o To strengthen cultural, spiritual, moral, and health programs designed for adults.

VI. Broadcasting Expansion Stages


Stage 1
Stage 2
Stage 3
Stage 4
Stage 5
Spirit. ed.
Pre-School Ed
Enrichment
Tech. ed.
Teacher ed.
Air & Corres.
School ed.
Soc. ed.
Air & Corres. College
Higher ed.
Elementary & Secondary ed.
Teacher ed.
Spirit. ed.
Pre-School ed.
Self-Learning
Skill ed.
Air & Corr. High Sch.
Air & Corr. College
Cu
Pr

Long-Term Program Development Plan

Stages	1	2	3	4	5	Pe
Daily Broad.Time	1 hr.(7hrs)	3 (21)	5 (35)	8 (56)	15 (105)	
Areas	p.m. 5:00-6:00	pm4:30-6:00 8:30-10:	am10:00-12: pm4:30-6:00 9:30-11:00	am10:00-12: pm5:00-11:00	am6:00-7:30 9:00-3:30 pm5:00-12:00	
Spiritual ed.	10 min. (70 min.)	→	→	0.5 hr. (3.5 hrs.)	45 min. (5 hrs.15min)	5
Pre-Sch. ed.	10 min. (70 min.)	→	→	0.5 hr. (3.5 hrs.)	1.5 hrs. (10.5 hrs.)	10
Enrichment Prog.	30 min. (210 min.)	→	Primary Sch. 2 hrs.(14 hr) →	Middle 1.5 hrs. (10.5 hrs.)	5 hrs.15 min (36 hrs.45 min)	3
Air & Correspondence		Air & Corr. 1.5 hrs. (10.5 hrs.)		Air & Corr. 0.5 hr.(3.5 hrs.)	3 hrs. (21 hrs.)	2
Tech. ed.	10 min. (70 min.)	→	→	0.5 hrs. (3.5 hrs.)	3 hrs. (21 hrs.)	2
Teacher ed.		0.5 hrs. (3.5 hrs.)	→	→	30 min. (3.5 hrs.)	3.
Others					1 hr. (7 hrs.)	6.
Feature of each stage	Trial	Demonstration	Development	Expansion	Completion	10

Status by Stage

Class	Description	Present	1	2	3	4	5
	Broadcast Time		1 hr.	2 hrs.	5 hrs.	8 hrs.	15 hrs.
Facilities	Studios	2	2	2	2	3	6
	Offices (rooms)	13	13	18	35	43	67
	Vehicles	3	3	4	5	6	10
Equip.	Video Tape Recorder	6	6	6	6	8	14
	Telecines	3	4	6	6	8	15
	Cameras	6	6	6	6	9	21
Small equip.	Car (mobile van)			1			
	Slow-motion vid. record.			1			
	"Hangul" marker			1			
	Portable record.			1			
	Portable camera			1			
Personnel	Researchers	2	8	9	13	16	21
	Broadcasters	61	71	105	154	238	378
	Administrators	5	13	17	24	34	53
	Typists	9	10	13	18	24	32
	Technicians	30	43	50	81	83	152
	Others	10					
	Total	123	146	184	270	385	636
Prod	Prod'd Programs	800	1095	2555	4015	6570	12065
Budget	Remuneration	W 230 mil.	W 350 mil.	@ 460 mil.	W640 mil	W 940 mil.	W 1520 mil
	Production Cost	W 180 mil.	W 210 mil.	W 510 mil.	W800 mil.	W1310 mil.	W 2400 mil
	General expend.	W 180 mil.	W 200 mil.	W 230 mil.	W250 mil.	W 300 mil.	W 400 mil.
	Others	W 60 mil.	W 10 mil.	W 20 mil.	W 20 mil.	W 20 mil.	W 20 mil.
	Total	W 650 mil.	W 770 mil.	W1220 mil.	W1710mil.	W2570 mil.	W4340 mil.

Facility Investment Plan

Content \ Stages	1	2	3	4	5
Studies		W 45 mil.	W 1576 mil.		
Equipment		W 525 mil.	W 626 mil.	W 1181 mil.	W 242 mil.
Reason		Increase in production scale	-	-	-
Total		W 570 mil.	W 2202 mil.	W 1181 mil.	W 242 mil.

VII. Plan for Production of TV Program

1. Purpose

This plan is purported to ensure an effective implementation of educational broadcasting services, utilizing the nationwide network of other broadcasting station, thus laying the ground for a fulfledged production and broadcasting of educational TV programs.

2. Operational principles

a. Program development gives priority to spiritual education, pre-school education, technical education and school supplementary programs

b. The programs should be educational and instructive in nature, easily comprehendable by the public

c. Production plan is made by a team of production specialists, subject matter specialists and users. Production follows deliberation by a committee

d. Daily broadcasting time will be one hour.

3. Production target

1) Total number of programs: 800, each for 20 mts.

800 x 20 mts. = 16,000 mts.

2) Production cost: 111,887,000 Won → 419,530 Won per hour

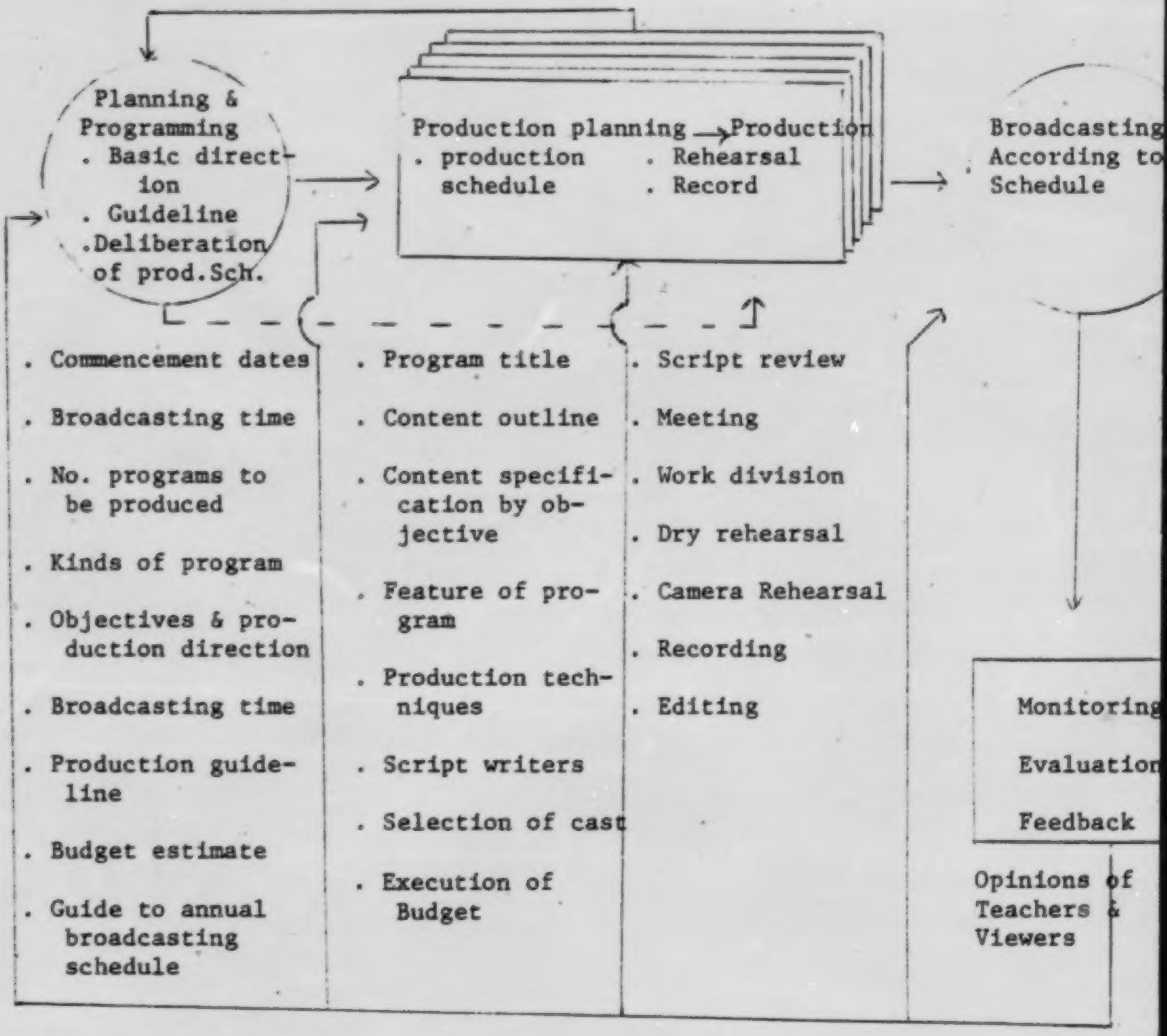
- Direct cost: 60,670,000 Won → 227,510 Won per hour
- Indirect cost: 51,217,000 Won → 192,060 Won per hour

3) Weekly broadcasting time: 6 hrs. + one hour rebroadcast

3. Program Specification

Areas		Topics	Numbers/length
Educational programs	Spiritual ed. (11.1%)	National ethics, new values	20' x 1
		National pride & identity, anti-communism, national development	20' x 1
	Technical & vocational ed. (11.1%)	Home management	20' x 1
		Skills and career guidance	20' x 1
	Pre-school ed. (16.7%)	Child development, home education	20' x 2
		Formulation of character	10' x 4
	Curriculum enrichment (44.4%)	Korean lang.	20' x 3
		Every day English	20' x 3
		Science: inquiry and creativity	20' x 1
		Mankind & society	20' x 1
	Leisure utilization (16.7%)	Skills of individual aptitude, aesthetic pursuits	10' x 6
Special programs (100%) 44 weeks		National Education Charter and its embodiment in life	360 mts. per week

4. Production Procedure


Planning & Programming
. Basic direction
. Guideline
.Deliberation of prod.Sch.
Production planning
. production schedule
Production
. Rehearsal
. Record
Broadcasting According to Schedule
. Commencement dates
. Broadcasting time
. No. programs to be produced
. Kinds of program
. Objectives & production direction
. Broadcasting time
. Production guideline
. Budget estimate
. Guide to annual broadcasting schedule
. Program title
. Content outline
. Content specification by objective
. Feature of program
. Production techniques
. Script writers
. Selection of cast
. Execution of Budget
. Script review
. Meeting
. Work division
. Dry rehearsal
. Camera Rehearsal
. Recording
. Editing
Monitoring
Evaluation
Feedback
Opinions of Teachers & Viewers

I. LAND BASED TRANSMISSION SYSTEM

I. LAND BASED TRANSMISSION SYSTEM

A. Construction expenses: 5,126,487 Won
- Location construction expenses: 859,602 Won
- Cost of equipment purchases: 4,266,885 Won

B. Operation expenses: 884,686 Won

TOTAL 6,011,173 Won

Kind	Power Out-Put	1978		1979		1980		Total
		Number of Location	Location	Number of Location	Location	Number of Location	Location	
High Out-Put Transmitting Station	TV 30KW FM 5KW	1	Seoul					1
Media Out-Put Transmitting Station	TV 10KW FM	1	DaeJun	4	. Chon ju . KwangJu . DaeGu . Busan			5
Low Out-Put Transmitting Station	TV 1KW FM 100W			2	. Masan	5	. ChunCheon . KangNeung . Hwang Ji . AnDong	7
Automatic Transmitting Station	TV 100W FM 10W			10	. Remote Place . Islands . Industrial Site	20	. Remote Place . Islands . Industrial . Site	30

APPENDIX 6

KEDI PUBLICATIONS

I. RESEARCH REPORTS

Report No.	Author	Title	Publication Date
1	Kim Yung Ho, Park Jae Mun, Song Yong Wi, Kwak Byung Sun, Park Mun Tai	Toward a New Instructional System: Summary Report of the First Small-Scale Tryout	September 1973
2	Kim Yung Woo, Kim Hyo Sun, Kim Dong Ku	Current Status and Problems in Teacher Education for Korean Elementary Schools	October 1973
3	Han Bok Su, Sung Nak June, Han Jong Ha	An Application of the KEDI Instructional System Model to Science Teaching in Middle School	February 1974
4	Kim Man Ki, Chun Sung Yon, Chung Chin Hwan	An Exploratory Study of the Key Variables for the Diffusion of Educational Innovations	December 1973
5	Kim Yung Woo, Kim Dong Ku	Perceptual Orientation of School Teachers and Students in Teacher Training Institutions	December 1973
6	Hong Dai Shik, Lee Chi Yung	A Study on the New Community Education Activities: Its Status and Relationship to Some Variables	December 1973
7	Kim Sin Bok, Choi Jong Jin, Kim Yung Chul	Revision and Supplement of Educational Development Plan (1972-76)	April 1974
8	Kim Yung Ho, Park Jae Mun, Cho Geung Ho	Report on the Second Tryout of New Educational System	March 1974
9	Kim Sooil, Shin Kun Ja, Lee Jung Bok	Teacher's Guide in Population Education in Social Studies, Grades 1st, 2nd and 3rd in Elementary School	May 1976

10	Shin Kuk Bom, Kim Sooil, Shin Kun Ja, Lee Jung Bok	Curriculum Development for Population Education--Social Studies in Elementary, Middle and High Schools	June 1974
11	Lee Keay-Hark, Lee Jeoung-Keun, Park A-Chung, Na Tong Jin, Cho Wanho	Study on Material Development of Skill Learning Education in Middle Schools	December 1973
12	Chung Sae-goo, Han Myun Hi, Song Yongui, Han Kyung Ja	An Experimental Research on the Effect of Inquiry Teaching: An Application of KEDI General Instructional System Model to the Inquiry Teaching in Social Studies	October 1974
13	Shin Se Ho, Lee Keay-Hark, Lee Jeung Kun	A Feasibility Study of Individually Assessed Skill Learning Model in Korean Middle School	July 1974
14	Chung Tae Bom, Suh Jung Hwa	Survey for Selection of Pilot Schools Comprehensive Tryout	October 1974
15	Kim Sin Bok, Kim Yung Chul, Chung Jin Hwan	Population Dynamics and Educational Planning	September 1974
16	Kim Yung Ho, Park Jae Mun	Basic Study on the Model Lower Grades of Primary School	December 1974
17	Hong Dae Shik, Hong Dong Shik	The Practice of Saemaul Education	December 1974
18	Kim Sooil, Shin Kun Ja, Ro Jong Hi, Park Achung, Kim Jong Shik, Park Kyung Hi	Curriculum Development for Population Education in Elementary, Middle and High Schools	March 1975
19	Song Youngui, La Dong Jin	Approaches to Curriculum Organization for Population Education	May 1975
20	Chang Suk Woo, Kim Hyung Lip, Chung Tae Bom, Byun Yung Ge, Lee Yung Ja, Park Kyung Sook, Min Sang Kun	Report on the Third Tryout of New Educational System	March 1975

21	Kim Hyung Lip, Kim Yung Ho, Ahn Changil, Park Kyung Sook, Shin Dong Ro, Kim Jong Shik, Oh Sung Hi	Analysis of the 1974 National Academic Achievement Test	December 1974
22	Byun Yung Ge, Kim Sooil, Song Youngui, Shin Kun Ja, La Dong Jin, Park Hae Jung, Kim Jong Shik, Yoo Wan Yung	A Study on the Curriculum and Instructional Materials for Population Education in Elementary and Middle Schools	November 1975
23	Kim Se Ki, Chung Tae Bom, Suh Jung Hwa	Survey of School Management System	March 1975
24	Hong Dae Shik, Hong Dong Shik	Toward Improvement of the New Community Education for Rural Development: Nonformal Education Activities	December 1975
25	Lee Keay Hark, Lee Jeung Kun, Chung Mooil	Survey of Vocational and Home Economic Programs in Middle School	December 1975
26	Kim Dae Yung, Lee Keay Hark, Lee Jeung Kun, Chung Mooil	Development of Skill Learning Curriculum in Middle Schools	November 1975
27	Lee In Hi, Lee Keay Hark, Lee Jeung Kun, Chung Mooil	Development of Home Economic Curriculum in Middle Schools	December 1975
28	Kim Yoon Tai, Park Do Soon, Chun Uisook	Determinants for Recurrent Expenditures and Economic Scale in Private Secondary School Operation	December 1975
29	Byung Yung Ge, Kim Sooil, Song Yongui, Shin Kun Ja, La Dong Jin, Park Hae Jung, Kim Jong Shik, Yoo Wan Yung	A Study on Curriculum and Instruction Materials for Population Education: High Schools	December 1975

30	Lee Jongjai, Lee Haesun, Kwak Byung Sun, Park Kyung Sook	Analysis of Student Achievement: Primary School	February 1976
31	Lee Jongjai, Kwak Byung Sun, Park Kyung Sook	A Preliminary Study on the Development of Tests of Basic Skills	May 1976
32	Kim Jai Bom, Chang Sok Woo, Chung Tai Bum, Park Jai Mun, Hong Sun Jung, Ro Jong Hi, Oh Sung Hi	Tryout of New Educational System	December 1975
33	Shin Se Ho, Kim Sooil, Shin Kun Ja, Song Youngui, Park Hae Jung	Exemplary Learning Units for Population Education	May 1976
34	Kim Shin Bok, Choi Jong Jin, Kim Yung Chul, Chung Jin Hwan	Educational Sector Plan of the 4th Economic Development Plan, 1977-1981	May 1976
35	Son In Soo, Joo Chai Yuk	National Consciousness of Korean People	November 1976
36	Kim Jae Bum, Chang Suk Woo, Park Jae Moon, Ro Jong Hi, Hong Soon Jeong, Chang Suk Min, Choi Jong Jin	An Application of New Educational System: Report of the First Comprehensive Demonstration of the KEDI Educational System	December 1976
37	Hong Kih Yung, Jim Sungil, Sung Il Jai, Lee Kwang Pyo	Survey of Air and Correspondence High Schools	December 1976
38	Kim Sooil, Shin Kun Ja, Na Tong Jin, Park Hye Jung, Yoo Kisook, Kim Chong Shik, Ryoo Wan Yung	Design of Resource Material Development for Population Education	July, 1976
39	Kim Sooil, Shin Kun Za	Population Analysis for Population Education	September 1976
40	Kim Sooil, Yoo Kisook, Song Young-ui	Population Increase and Social Development	September 1976
41	Kim Sooil, Ryoo Wan Yung	Population Change and Economic Development	September 1976
42	Kim Sooil, Na Tong Jin, Lee Hae Shun	Population Growth and Management of Environment	September 1976

43	Kim Sooil, Park Hye Jung	Family Life and Maternal/Child Health	September 1976
44	Kim Sooil, Kim Chong Sik	Reproduction in Human Population	September 1976
45	Kim Sooil, Park Hye Jung, Na Tong Jin	Findings on Demonstration of Population Education in Elementary and Secondary Schools	December 1976
46	Shin Se Ho, Kim Sooil, Yoo Kisook	Survey on Population Consciousness of Students and Teachers in Elementary and Secondary Schools	December 1976
47	Kim Sooil, Shin Kun Za	Educational Instruction of Population Objective Elaboration in Elementary and Secondary Schools	January 1977
48	Hong Dae Shik, Kim Sungil	A Study of Students' Attitudes Toward National Referents Principles of Attitude Change	December 1976
49	Hong Dae Shik	Principles of Attitude Change	December 1976
50	Kim Chung Hae, Park Jai Moon, Cho Mun Hyun	Preliminary Study on Curriculum for Teacher Education	December 1976
51	Shin Kuk Bum, Song Yoo Jai	Effect of ITV on Learning and Attitudes of Children	December 1976
52	Kim Yoon Tai, Kim Hyung Lip, Yoo Anjin, Kwon Jai Sool, Ro Jong Hi, Suh Jung Hwha, Jong Suk Min, Chung Mooil, Lee Wonjo	Toward a New Educational System Development for the Middle School: Report of the 1st Small-Scale Tryout of the KEDI Instructional System	December 1976
53	Byun Yung Kye, Jun Sung Yun	Opinion Survey on Field Implementation of the New Educational System	January 1977

54	Shin Se Ho, Kim Yoon Tai, Han Myun Hi, Cho Wonho, Song Yongui, Han Kyungja, Yoo Kwi Soo	A Study of Model Development of New Textbooks: A Development of Social Studies Textbooks in Elementary School	February 1977
55	Chung Sae-Goo, Han Myun Hi, Song Youngui, Han Kyoung Ja	A Study of the Structure of Social Studies Curriculum in Elementary and Middle School	March 1977
56	Kim Yoon Tai, Park Do Soon, Cho Won Ho, Kwak Byoung Sun, Park Kyung Sook, Suh Chung Wha	An Application of a New Educational System: Report of the Second Comprehensive Demonstration of the KEDI Educational System	June 1977
57	Kim Sung Il	A Preliminary Study on the Improvement of Value Education: A Content Analysis of the Textbook for Moral Education	December 1977
58	Shin Se Ho, Yoon Hyun Sub, Cho Gung Ho, Kwan Nak Won	The Effect of Learning Basic Life Skills and Impact of Co-educational and Non-educational Situations in Middle Schools on Changing Sex Role Bias Attitudes	December 1977
59	Chang Suk Woo, Kwon Kaun, Lee Chung Sung, Yoo Wan Yong, Han Mi Ra, Kang Ryang Wan, Kwon Nak Wan, Park Hye Jung, Han Young Sook, Kang Sung Wan, Cho Keu Yun, Kim Byung Wook	A Study of Development of Middle School Industrial Arts Instructional Materials for Increasing Technical Manpower	December 1977
60	Kim Sooil, Shin Kun Za, Lee San Hun, Yoo Kwan Soo, Park Bom Ik, Jun Kyung Sook	Basic Study of Curriculum Development for Environment Education	December 1977
61	Shin Kuk Bum, Nam Myoung Ja	An Analysis of Elementary School Children's Interest in Television Programs	December 1977
62	Kim Sooil, Shin Kun Za	Evaluation Report on Population Education	December 1977

63	Kim Yoon Tai, Ro Jong Hi, Kang Mu Sub, Chung Jin Hwan, Kang Soon Kyeo	Evaluation Study of Equalization Policy of Quality in High School Education	April 1978
64	Kim Yoon Tai, Chung Jin Hwan, Kang Soon Kyeo, Ro Jong Hi, Kang Mu Sub	Effectiveness of Technical and Business Education in Korea	December 1977

II. BOOKS

Author	Title	Publication Date
Lee Yung Dug, Park Jong Hong, Kim Sang Hyup, Chung Bum Mo, Lee Yung Ho, Yang Sung Doo, Park Bong Shik, Cho Soon, Chai Sang Up, Chai Sang, Chin Il Chul, Yoo Dong Shik, Yo Suk Ki, Chai Hung Ho, Chai Jae Suk, Ko Yung Ha, Yoo Kun Suk, Han Dong Se, Yang Jae Mo	Exploration of the Goals of Korean Education	May 1973
Lee Yung Dug, Kim Yoon Tai, Park Do Soon, Chang On Hyo, Koo Hark Bong	Demand and Supply Plan for Elementary and Secondary School Teachers (1972-86)	September 1972
Kim Yoon Tai, Koo Hark Bong, Shin Jung Shik	Explorations in Education Policy for National Unification of Korea	September 1973
Correspondence Education Research Staff	Plan for Specification of the First Grade Curriculum	October 1973
Kim Man Ki, Chun Sung Yon, Chung Chin Hwan	The Case of Educational Innovation in Korea	August 1973
Lim Bang Hyun, Yoo Dal Yung, Kim Jong Suh, Jin Wan Joong, Hwang Jong Kon, Chung Ji Wung, Ha Sang Rak, Kim Shin Il, Kim Jong Chul, Kim Il Soo, Kang Woo Chul, Cha Kyung Soo, Park Young Hon, Lee Mun Young, Ahn Hyo Sam, Chin Byung Hwang	Saemaeul Education: Theory and Practice	December 1973
Kim Young Ho, Lee San Ju, Kim Young Shik, Han San Bok	Theoretical Background on the Diffusion of Educational Innovations	December 1973
Son In Soo, Joo Chae Hyuk, Min Byung Wi	Historical Background of the National Education Charter	February 1974

Son In Soo, Joo Chae Hyuk, Min Byung Wi	The Image of the Korean People	August 1974
Park Young Hyun, Lee Don Hi, Kim An Joon, Chung Saegu, Son In Soo, Kang Woo Chul, Kim Chong Suh, Kim Jong Kun, Chang Suk Min, Yoon Hyun Sup, Oh Han Jin, Hu Se Uk	Problems in Education for National Identity	November 1976
Research Staff	Educational Goals and Objectives. Grades 1 - 6	April 1977
Lee Tone Hi, Lee Yung Dug, Lee San Ju, Son In Soo, Kim Hoguon, Shin Se Ho, Shin Kuk Bum, Lee Jong-jai, Kim Jae Bum, Kin Sin Il, Kim Jong Chul, Kang Woo Chul, Park Dong Suh, Kim Young Chan, Kim Soon Taik, Park Young Hyun	Towards Innovation in the Educational System in Korea	November 1975
Son In Soo, Joo Chae Hyuk, Min Byung Wi	Toward the Realization of Educational Ideals	January 1977
Shin Se Ho, Yoon Hyn Sup, Cho Kun Ho, Kwan Rak Won	Korean Sex Role Perceptions	December 1977
Lee Don Hi, Lee Dong Jung, Won Eui Bum, Chai Dong Hi, Yoon Sung Bum, Han Soon Ju, Ko Yung Bok, Chei Chang Kue, Kim Jun, Lee Kwan Kue	Studies on Curriculum for National Identity Education	December 1977
Rho Yung Hee, Kang Woo Chol, Kim An Jae, Kim Joon Ho, Han San Bok, Chu Jong Won, Lee Kyung Shik, Oh Ho Sung, Rho Chae-Shik, Kim Se Kwon, Chung Kyung Kyoon, Park Joon Hee, Shin Se Ho	Environment Education	December 1977
Kim Jae Bum, Chung Jin Hwan	A Study on Development of an Economical Workshop System for Vocational and Technical High School	June 1974

Lee Yung Dug, Koo Bum Mo, Lee Kye Ho, Park Young Hyon, Kim Tai Kil	The Tasks of National Spiritual Education	June 1976
Shin Kuk Bum, Koo Hark Bong, Chang Suk Min, Lee Jeong Bok	A Study on the Improvement of Teacher Training System: Teacher Training Institution for Elementary Schools	June 1975
Kim Yoon Tai, Suh Jong Hwa, Rho Jong Hi, Kim Se Ki	School Management Memorandum	
Kang San Jo, Kim Chung Hae, Kim Hyoung Rip, Rho Jong Hi, Park Jae Mon, Suh Jong Hwa, Shin Se Ho, Lee Young Jo, Hong Soon Jong	KEDI's New Educational System: Teacher Training Materials	December 1977
Research Staff	History of Korean Educational Development Institute	January 1978

III. CONTRACTED RESEARCH REPORTS

Author	Title	Publication Date
Chung Won Shik	Toward a Conceptual Structure of Latent Curriculum	July 1975
Lee Joong, Wang Ki Hang, Kim Hun Kyu	A Study on the Primary School Teacher Training System	July 1975
Lee Sang Kum, Kang Yune Ho, Lee Byung Ho	Analysis of Vocabulary Used in the Primary School Textbook, Grades 1-3	

IV. RESOURCE BOOKS

Resource Book No.	Author	Title	Publication Date
1	Kim Yoon Tai, Kim Man Ki, Kim Young Chul, Chung Jin Hwan	Korean Publications: Educational Policy and Administration--An Annotated Bibliography	May 1973
2	Kim Hyo Suhn, Yoo An Jin	Korean Publications: Teachers and Teacher Education--An Annotated Bibliography	May 1973
3	Koo Hark Bong	The Family Planning Programs and the Improvement of Educational Quality in Korea	October 1973
4	Kim Sin Bok, Chai Jong Jin, Kim Yung Chul, Chun Jin Hwan	Basic Statistical Data for Educational Planning and Development	March 1975
5	Koo Hark Bong, Kim Yung Woo, Kim Dong Koo	The Draft of Teacher Training Programs	March 1975
6	Shin Se Ho, Lim Han Ik, Shin Kuk Bom, Oh Ki Jyung, Choi Jong Ki, Lee Sung Jin, Kim Soon Taik, Lee Keay Hark	The Innovations of Korean Education	August 1975
7	Song Yoo Jai, Kang Kyung Suk, Kim Hyo Jung	Korean Research Publication: Educational Broadcasting--An Annotated Bibliography	December 1976
8	Byun Yung Kye, Chun Sung Yon, Shim Kum Sook	Field Studies on Implementation of the New Educational System, 1976	January 1977
9	Research Member	Curriculum for Population Education: Elementary, Middle, High School	February 1977

V. TRAINING MATERIALS

Author	Title	Publication Date
Lee Yung Dug, Kim Jong Suh, Un Yong Ki	Curriculum: Theory, Practice, and Evaluation	April 1974
Kim Hogwon	Learning and Instruction	April 1974
Kim Hogwon, Kim Yung Ho, Im In Je	Theory and Practice of Evaluation	April 1974
Kim Yung Ho, Im In Je, Park Do Soon	Techniques in Organizing Test Items	April 1974
Kim Dong Chul	Theory and Practice of ITV	April 1974
Lim Han Ik, Kim Yung Sun	Techniques for Preparing ITV Scripts (I), (II)	April 1974
Lee Sung Jin, Park Jae Mun, Chang Un Hyo	Techniques for Preparing Programme (I), (II)	April 1974
Shin Se Ho, Chung Woo Hyon, Byung Young Kei	Instructional Design (I), (II)	April 1974

VI. TEACHING-LEARNING MATERIALS

Classification	Grade Level	Title	Publication Date
First Small-Scale Tryout		Explanation of the Model	May 1973
		Guidelines for Management of KEDI Demonstration Schools	May 1973
	3	Teacher's Guide: Mathematics	May 1973
	3	Teacher's Guide: Science	May 1973
	5	Teacher's Guide: Mathematics	May 1973
	5	Teacher's Guide: Science	May 1973
	3	Workbook: Mathematics	May 1973
	3	Workbook: Science	May 1973
	5	Workbook: Mathematics	May 1973
	5	Workbook: Science	May 1973
Second Small-Scale Tryout		Explanation of the Model	November 1973
		Guidelines for Management of KEDI Demonstration Schools	November 1973
	2	Teacher's Guide: Korean Language	November 1973
	2	Teacher's Guide: Mathematics	November 1973
	2	Teacher's Guide: Moral Education	November 1973

Second Small-Scale Tryout	2	Workbook: Korean Language	November 1973
	2	Workbook: Mathematics	November 1973
	2	Workbook: Moral Education	November 1973
Third Small-Scale Tryout	3-2	Teacher's Guide	August 1974
	3-2	Workbook: Korean Language	August 1974
	3-2	Workbook: Mathematics	August 1974
	3-2	Workbook: Social Studies	August 1974
	3-2	Workbook: Science	August 1974
	3-2	Workbook: Fine Arts	August 1974
	3-2	Workbook: Moral Education, Physical Education, Music	August 1974
Fourth Small-Scale Tryout	5-1	Teacher's Guide	April 1975
	5-1	Workbook: Korean Language, Moral Education	April 1975
	5-1	Workbook: Social Studies, Korean History	April 1975
	5-1	Workbook: Mathematics	April 1975
	5-1	Workbook: Science	April 1975
Inquiry Learning		Teacher's Guide: Social Studies	May 1974
		Workbook: Social Studies	May 1974

First Comprehensive Demonstration		Guideline for Management of KEDI Demonstration Schools	August 1975
	5-2	Teacher's Guide: Moral Education	August 1975
	5-2	Teacher's Guide: Korean Language	August 1975
	5-2	Teacher's Guide: Social Studies	August 1975
	5-2	Teacher's Guide: Mathematics	August 1975
	5-2	Teacher's Guide: Science	August 1975
	5-2	Teacher's Guide: Music	August 1975
	5-2	Teacher's Guide: Fine Arts	August 1975
	5-2	Teacher's Guide: Physical Education	August 1975
	5-2	Teacher's Guide: Vocational Subjects	August 1975
	3-2	Teacher's Guide Moral Education	August 1975
	3-2	Teacher's Guide: Korean Language	August 1975
	3-2	Teacher's Guide: Social Studies	August 1975
	3-2	Teacher's Guide: Mathematics	August 1975
	3-2	Teacher's Guide: Science	August 1975
	3-2	Teacher's Guide: Music	August 1975
	3-2	Teacher's Guide: Fine Arts	August 1975
	3-2	Teacher's Guide: Physical Education	August 1975

First Comprehensive Demonstration	5-2	Workbook: Korean Language (Moral Education, Music, Fine Arts, Vocational Subjects)	August 1975
	5-2	Workbook: Social Studies	August 1975
	5-2	Workbook: Mathematics	August 1975
	5-2	Workbook: Science	August 1975
	3-2	Workbook: Korean Language (Moral Education, Music, Fine Arts, Vocational Subjects)	August 1975
	3-2	Workbook: Social Studies	August 1975
	3-2	Workbook: Mathematics	August 1975
	3-2	Workbook: Science	August 1975
Second Comprehensive Demonstration		Guideline for Management of KEDI Demonstration Schools	February 1976
	3-1,2	Teacher's Guide: Moral Education	March 1976
	3-1,2	Teacher's Guide: Korean Language	August 1976
	3-1,2	Teacher's Guide: Social Studies	August 1976
	3-1,2	Teacher's Guide: Mathematics	August 1976
	3-1,2	Teacher's Guide: Science	August 1976
	3-1,2	Teacher's Guide: Music	March 1976
	3-1,2	Teacher's Guide: Fine Arts	March 1976

Second Comprehensive Demonstration	3-1,2	Teacher's Guide: Physical Education	March 1976
	4-1,2	Teacher's Guide: Moral Education	March 1976
	4-1,2	Teacher's Guide: Korean Language	March 1976
	4-1,2	Teacher's Guide: Social Studies	March 1976
	4-1,2	Teacher's Guide: Mathematics	March 1976
	4-1,2	Teacher's Guide: Science	March 1976
	4-1,2	Teacher's Guide: Music	March 1976
	4-1,2	Teacher's Guide: Fine Arts	March 1976
	4-1,2	Teacher's Guide: Physical Education	March 1976
	4-1,2	Teacher's Guide: Vocational Subjects, Industrial Arts	March 1976
	5-1,2	Teacher's Guide: Moral Education	March 1976
	5-1,2	Teacher's Guide: Korean Language	March 1976
	5-1,2	Teacher's Guide: Social Studies	March 1976
	5-1,2	Teacher's Guide: Mathematics	March 1976
	5-1,2	Teacher's Guide: Science	March 1976
	5-1,2	Teacher's Guide: Music	March 1976
	5-1,2	Teacher's Guide: Fine Arts	March 1976
	5-1,2	Teacher's Guide: Physical Education	March 1976

Second Comprehensive Demonstration	5-1,2	Teacher's Guide: Vocational Subjects	March 1976
	3-1,2	Workbook: Korean Language (Moral Education, Music, Fine Arts)	March 1976
	3-1,2	Workbook: Social Studies	March 1976
	3-1,2	Workbook: Mathematics	March 1976
	3-1,2	Workbook: Science	March 1976
	4-1,2	Workbook: Korean Language (Moral Education, Music, Fine Arts, Vocational Subjects)	March 1976
	4-1,2	Workbook: Social Studies	March 1976
	4-1,2	Workbook: Mathematics	March 1976
	4-1,2	Workbook: Science	March 1976
	5-1,2	Workbook: Korean Language (Moral Education, Music, Fine Arts, Vocational Subjects)	March 1976
	5-1,2	Workbook: Social Studies	March 1976
	5-1,2	Workbook: Mathematics	March 1976
	5-1,2	Workbook: Science	March 1976
Third Comprehensive Demonstration		Guidelines for Management of KEDI Instructions School	July 1977
	3-1,2	Teacher's Guide: Moral Education	March 1977
	3-1,2	Teacher's Guide: Korean Language	March 1977

Third Comprehensive Demonstration	3-1,2	Teacher's Guide: Social Studies	March 1977
	3-1,2	Teacher's Guide: Mathematics	March 1977
	3-1,2	Teacher's Guide: Science	March 1977
	3-1,2	Teacher's Guide: Music	March 1977
	3-1,2	Teacher's Guide: Fine Arts	March 1977
	3-1,2	Teacher's Guide: Physical Education	March 1977
	4-1,2	Teacher's Guide: Moral Education	March 1977
	4-1,2	Teacher's Guide: Korean Language	March 1977
	4-1,2	Teacher's Guide: Social Studies	March 1977
	4-1,2	Teacher's Guide: Mathematics	March 1977
	4-1,2	Teacher's Guide: Science	March 1977
	4-1,2	Teacher's Guide: Music	March 1977
	4-1,2	Teacher's Guide: Fine Arts	March 1977
	4-1,2	Teacher's Guide: Physical Education, Vocational Subjects	March 1977
	5-1, 2	Teacher's Guide: Moral Education	March 1977
	5-1,2	Teacher's Guide: Korean Language	March 1977
	5-1,2	Teacher's Guide: Social Studies	March 1977
	5-1,2	Teacher's Guide: Mathematics	March 1977

Third Comprehensive Demonstration	5-1,2	Teacher's Guide: Science	March 1977
	5-1,2	Teacher's Guide: Music	March 1977
	5-1,2	Teacher's Guide: Fine Arts	March 1977
	5-1,2	Teacher's Guide: Physical Education	March 1977
	5-1,2	Teacher's Guide: Vocational Subjects	March 1977
	6-1,2	Teacher's Guide: Moral Education	March 1977
	6-1,2	Teacher's Guide: Korean Language	March 1977
	6-1,2	Teacher's Guide: Social Studies	March 1977
	6-1,2	Teacher's Guide: Mathematics	March 1977
	6-1,2	Teacher's Guide: Science	March 1977
	6-1,2	Teacher's Guide: Music	March 1977
	6-1,2	Teacher's Guide: Fine Arts	March 1977
	6-1,2	Teacher's Guide: Physical Education	March 1977
	6-1,2	Teacher's Guide: Vocational Education	March 1977
	3-1,2	Workbook: Korean Language (Moral Education, Music, Fine Arts)	March 1977
	3-1,2	Workbook: Social Studies	March 1977
	3-1,2	Workbook: Mathematics	March 1977
	3-1,2	Workbook: Science	March 1977

Third Comprehensive Demonstration	4-1,2	Workbook: Korean Language: (Moral Education, Music, Fine Arts, Vocational Subjects)	March 1977
	4-1,2	Workbook: Social Studies	March 1977
	4-1,2	Workbook: Mathematics	March 1977
	4-1,2	Workbook: Science	March 1977
	5-1,2	Workbook: Korean Language (Moral Education, Music, Fine Arts, Vocational Subjects)	March 1977
	5-1,2	Workbook: Social Studies	March 1977
	5-1,2	Workbook: Mathematics	March 1977
	5-1,2	Workbook: Science	March 1977
	6-1,2	Workbook: Korean Language (Moral Education, Music, Fine Arts, Vocational Subjects)	March 1977
	6-1,2	Workbook: Social Studies	May 1977
	6-1,2	Workbook: Mathematics	May 1977
	6-1,2	Workbook: Science	May 1977
Fourth Comprehensive Demonstration		Guidelines for Management of KEDI Instructions School	February 1978
	2-1,2	Teacher's Guide: Moral Education	March 1978
	2-1,2	Teacher's Guide: Korean Language	August 1978

Fourth Comprehensive Demonstration	2-1,2	Teacher's Guide: Social Studies	August 1978
	2-1,2	Teacher's Guide: Mathematics	August 1978
	2-1,2	Teacher's Guide: Science	August 1978
	2-1,2	Teacher's Guide: Music	August 1978
	2-1,2	Teacher's Guide: Fine Arts	August 1978
	3-1,2	Teacher's Guide: Moral Education	August 1978
	3-1,2	Teacher's Guide: Korean Language	August 1978
	3-1,2	Teacher's Guide: Social Studies	August 1978
	3-1,2	Teacher's Guide: Mathematics	August 1978
	3-1,2	Teacher's Guide: Science	August 1978
	3-1,2	Teacher's Guide: Music	August 1978
	3-1,2	Teacher's Guide: Fine Arts	August 1978
	4-1,2	Teacher's Guide: Moral Education	August 1978
	4-1,2	Teacher's Guide: Korean Language	August 1978
	4-1,2	Teacher's Guide: Social Studies	August 1978
	4-1,2	Teacher's Guide: Mathematics	August 1978
	4-1,2	Teacher's Guide: Science	August 1978
	4-1,2	Teacher's Guide: Music	August 1978
	4-1,2	Teacher's Guide: Fine Arts	August 1978

Fourth Comprehensive Demonstration	4-1,2	Teacher's Guide: Vocational Subjects	August 1978
	5-1,2	Teacher's Guide: Moral Education	August 1978
	5-1,2	Teacher!s Guide: Korean Language	August 1978
	5-1,2	Teacher's Guide: Social Studies	August 1978
	5-1,2	Teacher's Guide: Mathematics	August 1978
	5-1,2	Teacher's Guide: Science	August 1978
	5-1,2	Teacher's Guide: Music	August 1978
	5-1,2	Teacher's Guide: Fine Arts	August 1978
	5-1,2	Teacher's Guide: Vocational Subjects	August 1978
	6-1,2	Teacher's Guide: Korean Language	August 1978
	6-1,2	Teacher's Guide: Social Studies	August 1978
	6-1,2	Teacher's Guide: Mathematics	August 1978
	6-1,2	Teacher's Guide: Science	August 1978
	6-1,2	Teacher's Guide: Music	August 1978
	6-1,2	Teacher's Guide: Fine Arts	August 1978
	6-1,2	Teacher's Guide: Vocational Subjects	March 1978 August 1978
	2nd Grade	Teacher's Guide: Physical Education	August 1978
	2-1,2	Workbook: Korean Language (Moral Education, Music, Fine Arts)	August 1978

Fourth Comprehensive Demonstration	2-1,2	Workbook: Social Studies	August 1978
	2-1,2	Workbook: Mathematics	August 1978
	2-1,2	Workbook: Science	August 1978
	3-1,2	Workbook: Korean Language (Moral Education, Music, Fine Arts	August 1978
	3-1,2	Workbook: Social Studies	August 1978
	3-1,2	Workbook: Mathematics	August 1978
	3-1,2	Workbook: Science	August 1978
	4-1,2	Workbook: Korean Language (Moral Ed., Music, Fine Arts, Vocational Subjects)	August 1978
	4-1,2	Workbook: Social Studies	August 1978
	4-1,2	Workbook: Mathematics	August 1978
	4-1,2	Workbook: Science	August 1978
	5-1,2	Workbook: Korean Language (Moral Ed., Music, Fine Arts, Vocational Subjects)	August 1978
	5-1,2	Workbook: Social Studies	August 1978
	5-1,2	Workbook: Mathematics	August 1978
	5-1,2	Workbook: Science	August 1978
	6-1,2	Workbook: Korean Language (Moral Ed., Music, Fine Arts, Vocational Subjects)	August 1978
	6-1,2	Workbook: Social Studies	August 1978

Fourth Comprehensive Demonstration	6-1,2	Workbook: Mathematics	August 1978
	6-1,2	Workbook: Science	August 1978
Inquiry Learning	1-1,2	Teacher's Guide: Science	August 1975
	2-1,2	Teacher's Guide: Science	August 1975
	3-1,2	Teacher's Guide: Science	August 1975
	4-1,2	Teacher's Guide: Science	August 1975
	5-1,2	Teacher's Guide: Science	August 1975
	6-1,2	Teacher's Guide: Science	August 1975
	1-1,2	Workbook: Science	August 1975
	2-1,2	Workbook: Science	August 1975
	3-1,2	Workbook: Science	August 1975
	4-1,2	Workbook: Science	August 1975
	5-1,2	Workbook: Science	August 1975
	6-1,2	Workbook: Science	August 1975

VII. POPULATION EDUCATION PROJECT MATERIALS

School Level	Grade Level	Title	Publication Date
Elementary School	4	Teacher's Guide	May 1975
	5	Teacher's Guide	May 1975
	6	Teacher's Guide	May 1975
Middle School		Teacher's Guide: Social Studies	May 1975
		Korean History	May 1975
		Mathematics	May 1975
		Science	May 1975
		Physical Education	May 1975
		Home Economics	May 1975
Elementary School	4	Workbook	May 1975
	5	Workbook	May 1975
	6	Workbook	May 1975
Middle School	7	Workbook	May 1975
	8	Workbook	May 1975
	9	Workbook	May 1975
High School		Teacher's Guide: World History	May 1975
		Korean History	May 1975
		Geography	May 1975
		Society and Culture	May 1975
		Political Science & Economics	May 1975
		Biology	May 1975
		Mathematics	May 1975
		Physical Education	May 1975
		Home Economics	May 1975
		Workbook: World History	May 1975
		Korean History	May 1975
		Geography	May 1975
		Society & Culture	May 1975

High School	Workbook:	Political Science & Economics	May 1975
		Biology	May 1975
		Mathematics	May 1975
		Physical Education	May 1975
		Home Economics	May 1975

VIII. BASIC SKILLS LEARNING MATERIALS FOR THE MIDDLE SCHOOL

Author	Title	Publication Date
Technical Education Research Group	Individually Assessment Instruction Model	January 1974
	Workbook	January 1974
	Teacher's Guide	January 1974

IX. PRELIMINARY REPORT ON THE SPECIFICATIONS FOR THE CURRICULUM OF THE AIR AND CORRESPONDENCE HIGH SCHOOL

Title	Publication Date
10th Grade Preliminary Report on the Specifications of Curriculum	July 1973
11th Grade Preliminary Report on the Specifications of Curriculum	August 1974
12th Grade Preliminary Report on the Specifications of Curriculum	August 1975

X. TEXTBOOKS FOR THE AIR AND CORRESPONDENCE HIGH SCHOOL

		Publication Dates	
Grade Level	Title	First Semester	Second Semester
10th	Korean Language	March 1974	August 1974
	Social Studies	March 1974	August 1974
	National Ethics	March 1974	August 1974
	Geography	March 1974	August 1974
	Common Mathematics	March 1974	August 1974
	Biology	March 1974	August 1974
	General Industry	March 1974	August 1974
	English	March 1974	August 1974
	Technical Subjects (Male)	March 1974	August 1974
	Technical Subjects (Female)	March 1974	August 1974
	Physical Education	March 1974	
	Extra Curricula Activities	March 1974	
	Fine Arts	March 1974	
10th	Korean Language	March 1975	August 1975
	Paritics and Economics	March 1975	August 1975
	Geography	March 1975	August 1975
	Common Mathematics	March 1975	August 1975
	Biology	March 1975	August 1975
	General Industry	March 1975	August 1975
	English	March 1975	August 1975
	Technical Subjects (Male	March 1975	August 1975
	Technical Subjects (Female)	March 1975	August 1975
	National Ethics	March 1975	
	Physical Education	March 1975	
	Extra Curricula Activities	March 1975	
	Music	March 1975	
	Fine Arts	March 1975	
	Chinese Literature	March 1975	

11th	Korean Language	March 1975	August 1975
	Mathematics	March 1975	August 1975
	English	March 1975	August 1975
	Physics	March 1975	August 1975
	Science of Earth	March 1975	August 1975
	German Language	March 1975	August 1975
	World History	March 1975	August 1975
	Physical Education	March 1975	August 1975
	Chinese Literature	March 1975	
	Music	March 1975	
	Basic Engineering (Male)	March 1975	
	Home Economics (Female)	March 1975	
10th	Korean Language	March 1976	August 1976
	Common Mathematics	March 1976	August 1976
	English	March 1976	August 1976
	Paritics and Economics	March 1976	August 1976
	Geography (I)	March 1976	August 1976
	Biology	March 1976	August 1976
	General Industry	March 1976	August 1976
	Technical Subjects (Male)	March 1976	August 1976
	Technical Subjects (Female)	March 1976	August 1976
	National Ethics	March 1976	
	Physical Education	March 1976	
	Chinese Literature (Vol. 1)	March 1976	
	Music	March 1976	
	Fine Arts	March 1976	
11th	Korean Language	March 1976	August 1976
	Mathematics (I)	March 1976	August 1976
	English	March 1976	August 1976
	Physics	March 1976	August 1976
	Science of Earth	March 1976	August 1976
	Basis Engineering (Male)	March 1976	August 1976
	German Language	March 1976	
	World History	March 1976	

11th	Physical Education	March 1976	
	National Ethics	March 1976	
	Chinese Literature (Vol. 2)	March 1976	
	Music	March 1976	
	Home Economics (Female)	March 1976	
	Korean Grammar	March 1976	August 1976
	Fine Arts	March 1976	August 1976
12th	Korean Language	March 1976	August 1976
	Mathematics (II)	March 1976	August 1976
	English	March 1976	August 1976
	Chemistry	March 1976	August 1976
	Korean Language (II)	March 1976	
	German Language	March 1976	
	Korean History	March 1976	
	Society - Culture	March 1976	
	Geography (II)	March 1976	
	Physical Education	March 1976	
	Industry (Male)	March 1976	
	Commercial Subjects (Male)	March 1976	
	Home Economics (Female)	March 1976	
	Chinese Literature (Vol. 2)	March 1976	
	Classical Literature		August 1976
10th	Korean Language	March 1977	August 1977
	Common Mathematics	March 1977	August 1977
	English	March 1977	August 1977
	Paritics & Economics	March 1977	August 1977
	Geography (I)	March 1977	
	Technical Subjects (Male)	March 1977	
	Home Economics (Female)	March 1977	
	National Ethics	March 1977	
	Physical Education	March 1977	
	Chinese Literature (Vol. 1)	March 1977	
	Music	March 1977	
	Fine Arts	March 1977	
	Korean Grammar	March 1977	

11th	Korean Language	March 1977	August 1977
	Mathematics (I)	March 1977	August 1977
	English	March 1977	August 1977
	Physics	March 1977	August 1977
	Science of Earth	March 1977	August 1977
	Basis Engineering (Male)	March 1977	August 1977
	German Language	March 1977	
	World History	March 1977	
	Physical Education	March 1977	
	Chinese Literature (Vol. 2)	March 1977	
	Music	March 1977	
	Fine Arts		August 1977
12th	Korean Language	March 1977	August 1977
	Mathematics (II)	March 1977	August 1977
	English	March 1977	August 1977
	Chemistry	March 1977	August 1977
	Classical Literature	March 1977	August 1977
	German Language	March 1977	
	Korean History	March 1977	
	Society-Culture	March 1977	
	Geography (II)	March 1977	
	Physical Education	March 1977	
	Industry (Male)	March 1977	
	Commercial Subjects (Male)	March 1977	
	Home Economics (Female)	March 1977	

XI. EVALUATION OF ACADEMIC ACHIEVEMENT OF AIR AND CORRESPONDENCE HIGH SCHOOLS

Year	Grade Level	Course of Study
1974	10	Korean Language
		Common Mathematics
		English
		Geography (I)
		Technical Subjects (Male)
		National Ethics
		Physical Education
		Music
		Fine Arts
		Social Studies
		Biology
		General Industry
		Technical Subjects (Female)
		Extra Curricula Activities
1975	10,11	Korean Language
		Common Mathematics
		English
		Paritics & Economics
		Geography (I)
		Technical Subjects (Male)
		Home Economics (Female)
		National Ethics
		Physical Education
		Chinese Literature
		Music
		Fine Arts
		Korean Grammar
		Physics
		Science of Earth

675

676

1975	10,11	Basis Engineering (Male)
		German Language
		World History
		Chinese Literature (Vol. 2)
		Biology
		General Industry
		Technical Subjects (Female)
		Extra Curricula Activities
1976	10, 11, 12	Korean Language
		Common Mathematics
		English
		Paritics and Economics
		Geography (I)
		Technical Subjects (Male)
		Home Economics (Female)
		National Ethics
		Physical Education
		Chinese Literature (Vol. 1)
		Music
		Fine Arts
		Korean Grammar
		Physics
		Science of Earth
		Basis Engineering (Male)
		German Language
		World History
		Chinese Literature (Vol. 2)
		Chemistry
		Classical Literature
		Korean History
		Society-Culture
		Geography (II)
		Industry (Male)
		Commercial Subjects (Male
		Biology

1976	10, 11, 12	General Industry
		Technical Subjects (Female)
		Korean Language (II)
1977	10, 11, 12	Korean Language
		Common Mathematics
		English
		Paritics and Economics
		Geography (I)
		Technical Subjects (Male)
		Home Economics (Female)
		National Ethics
		Physical Education
		Chinese Literature (Vol. 1)
		Music
		Fine Arts
		Korean Grammar
		Physics
		Science of Earth
		Basis Industry (Male)
		German Language
		World History
		Chinese Literature (Vol. 2)
		Chemistry
		Classical Literature
		Korean History
		Society-Culture
		Geography (II)
		Industry (Male)
		Commercial Subjects (Male)

XII. HANDBOOKS OF RADIO INSTRUCTION FOR THE AIR AND CORRESPONDENCE HIGH SCHOOLS

1974	1975	1976			1977	1978
10-12th Grade	10-12th Grade	10th Grade	11th Grade	12th Grade	10-12th Grade	10-12th Grade
March 1974	March 1975	March 1976	March 1976	March 1976	March 1977	March 1978

XIII. MONTHLY LEARNING SHEET FOR THE AIR AND CORRESPONDENCE HIGH SCHOOLS

Course of Study	10th Grade			11th Grade			12th Grade		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Korean Language	April 1978	May 1978	June 1978	April 1978	May 1978	June 1978	April 1978	May 1978	June 1978
English	"	"	"	"	"	"	"	"	"
Mathematics	"	"	"	"	"	"	"	"	"

XIV. HIGH SCHOOL TEACHER IN-SERVICE TRAINING MATERIALS

Course of Study	Publication Date
Teaching Profession and Refinement	June 1973 - July 1974
Korean Language	" "
National Ethics	" "
Social Studies	" "
History	" "
Physics	" "
Chemistry	" "
English	" "
Mathematics	" "
Home Economics	" "
Physical Education	" "
Military Drill	" "
Music	" "
Industry	" "
Technical Subjects	" "
Biology	" "
Science of Earth	" "
Fine Arts	" "
German Language	" "
French Language	" "
Agriculture	" "
Marine and Shipping	" "
Geography	" "
School Administration	" "

XV. PRIMARY SCHOOL TESTS

Grade Level	Type of Test	Publication Date
4-6	Pre-Test	April 1973
4-6	1st Formative Test	March 1973
4-6	2nd Formative Test	April 1973
4-6	3rd Formative Test	June 1973
4-6	4th Formative Test	June 1973
4-6	5th Formative Test	July 1973
4-6	6th Formative Test	September 1973
4-6	7th Formative Test	October 1973
4-6	8th Formative Test	November 1973
4-6	9th Formative Test	December 1973
4-6	10th Formative Test	January 1974
4-6	1st Summative Test	June 1973
4-6	2nd Summative Test	January 1974

XVI. SCHOOL BROADCAST TEACHERS GUIDE FOR ELEMENTARY SCHOOL

Year	Title	Publication Date
1975	School Broadcasting Teacher's Guide	February 1975
1976	School Broadcasting Teacher's Guide	February 1976
1977	School Broadcasting Teacher's Guide	February 1977
1978	School Broadcasting Teacher's Guide	February 1978

XVII. SCHOOL BROADCAST TEACHERS GUIDE FOR E-M PROJECT

Classification	Grade Levels	Publication Dates
Second Comprehensive Demonstration	3	March 1976
	4	March 1976
	5	March 1976
Third Comprehensive Demonstration	3	March 1977
	4	March 1977
	5	March 1977
	6	March 1977

XVIII. PRIMARY SCHOOL CURRICULUM REPORTS

Author	Course of Study	Publication Date
Kim Tai Kil, Lee Sun Kil, Choi Chang Han, Kwang Kyung Shik, Cho Kung Ho	Moral Education	February 1974
Kang Yoon Ho, Park Bung Bai, Chung Woo Sang, Kim Sung Dong, Ko Kwang Ok, Kim Bok Rae, Yoo An Jin, Song Yong Ui	Korean Language	February 1974
Kang Woo Chul, Lee Chan, Cho Kwang Joon, Lee Tai Kun, Ku Yon Mu, Park Hwan E, Kwon Suk Joo, Han Myun Hi, Han Kyung Ja	Social Study	February 1974
Kim Chi Yung, Oh Byung Sung, Lee Hong Chon, Oh Jin Suk, Lee Kwang Ju, Yoo Ja Duk, Chun Pyung Kuk	Mathematics	February 1974
Park Sung Ja, Kim Sun Ho, Kim Yung Soo, Han Jong Ha, Kim Yoon Shik, Kim Hak Hyun, Yoo In Su, Lee Jong Hwa, Cho Kyu Song, Cha Jae Sun, Ha Byung Chon, Kwan Byung Sun	Science	February 1974
Jang Chang Hwan, Yoon Yang Suk, Lee Hong Su, Kim Jun Soo, Hong Sun Jung	Music	February 1974
No Jae Woo, Ku Ki Nam, Kim Jae Bok, Bang Sung Ok, Chang Yung Ae, Han Ok Hi, Hwang Wan Yong	Fine Arts	February 1974
Lee Kyung Lan, Lee Sang Kuk, Chung Yung Jin, Kim Jong Ho, Shin Hyun Bok, Park Chung	Vocational Subjects	February 1976

XIX. MIDDLE SCHOOL CURRICULUM REPORTS

Author	Course of Study	Publication Date
Park Han Shik, Kim Nyun Shik, Ku Kwang Joo, Oh Byung Soon	Mathematics	February 1975
Lee Meng Sung, Mun Yung, Byun Hae Yong, Kim Young Dae, Chai Young Ja	English	February 1975
Park Soon Jae, Yoo Kyung Rho, Lee Won Shik, Chang Nam Ki, Chong Jong Ryul, Kwong Young Hwan, Kim Dong Pil, Kim Byung Keu, Kim In Ok, Park Su Youn, Song Young Jae, Choi Nak Jun, Han Bok Su, Lee Mon Won, Lee Sang Hun, Han Jong Ha	Science	February 1975
Lee Eun Baik, Park Bong Bai, Lee Hyun Bok, Jee Kil Eung	Korean Language	December 1975
Chung Se-Gu, Lee Yang Woo, Choi Wan Ki, Lee Jong Yul, Han Myun Hi	Korean History	December 1975
Chung Se-Gu, Lee Yang Woo, Choi Wan Ki, Lee Jong Yul, Han Myun Hi	Social Studies	December 1975

XX. PERIODICALS AND NEWSLETTERS

Title	Time Period	No. of Issues Published
Educational Development News	April 1972 - March 1978	30
Field Research	August 1974 - April 1978	23
Korean Educational Development	January 1976 - March 1977	3
Annual Report in Korea	August 1974 - August 1977	3
Annual Report in English	November 1974 - December 1977	3
Korean Education	August 1974 - June 1977	6
List of Publications	August 1975 - June 1977	2
Current Contents of Foreign Journals: Education, Psychology, Society	February 197 - April 1978	8
Brochure in Korea	October 1972 - August 1977	6
Brochure in English	April 1973 - December 1977	5
Brochure in Educational Broadcasting	August 1975	1
Brochure in Population /Environment Education	November 1975	1